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Mall | Memory | Morphology

Fragmenting | Adapting an Obsolete Building Type



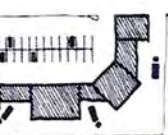
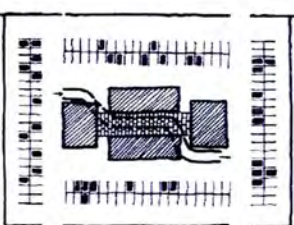
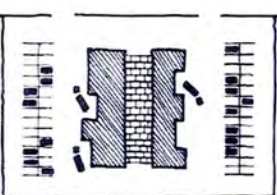
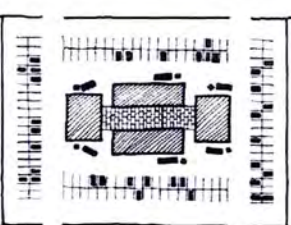
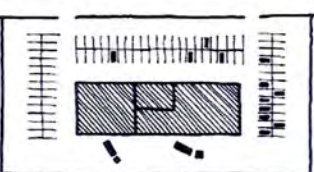
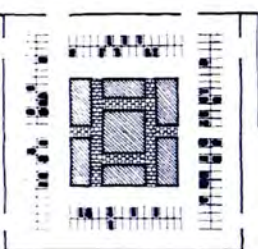
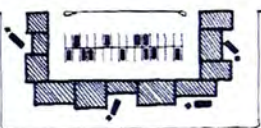


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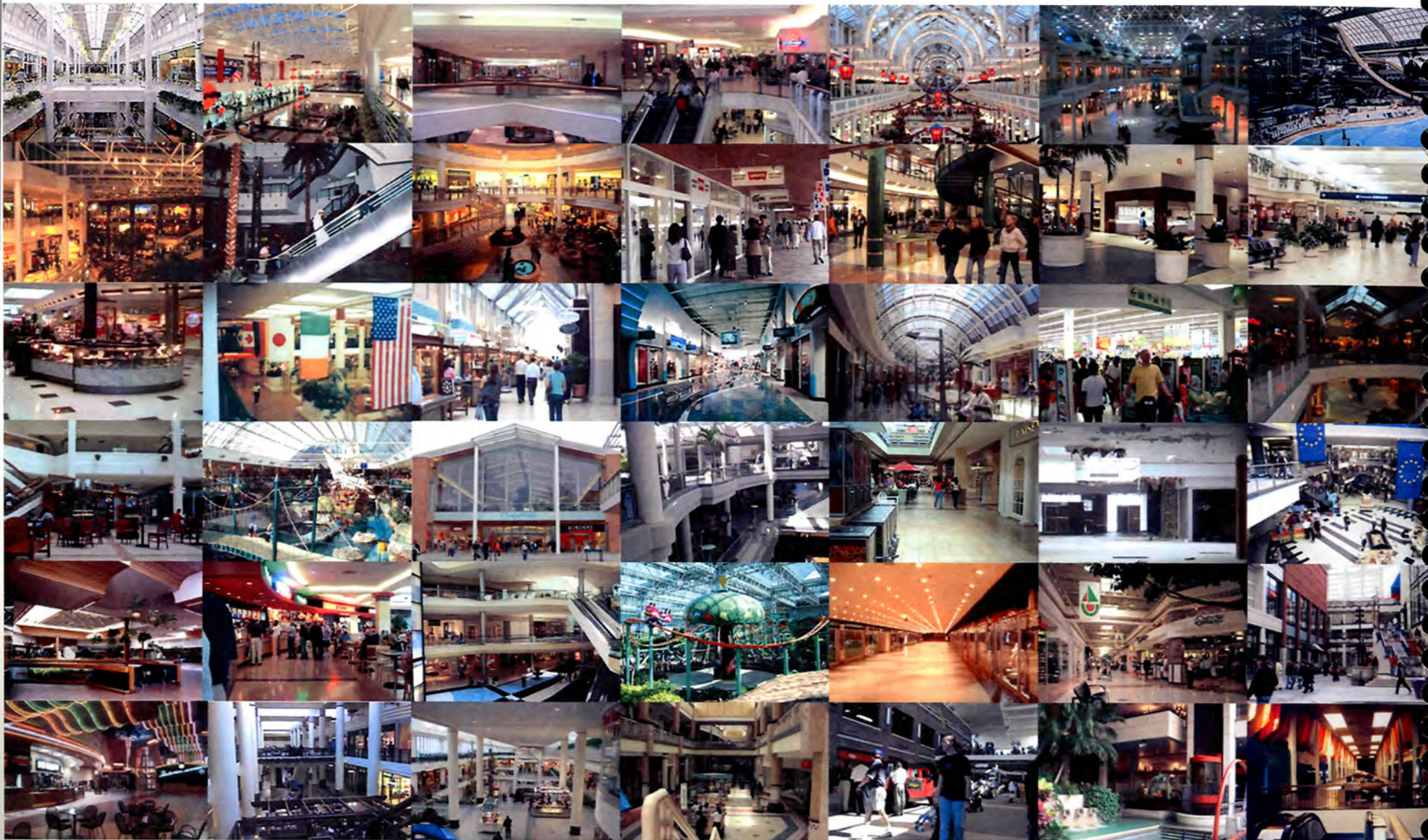
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Facing contemporary retail trends, the age of the shopping mall is on the verge of obsolescence. An icon of late twentieth century economy and society, the mall holds significant importance to both individual and collective memory. In order to preserve its iconic presence, the type must be fragmented and adapted to a completely different program to avoid total demolition. Doing so will preserve the memory of its presence and experience while introducing a new layer of program and memory in its fabric.

1

The Value of Memory in the City

*"The history book of what cities have become, of all that they might have been or once were, have been blended and shuffled by time into changing patterns that always contain a trace of their otherness"*¹

Many Historians believe that the city is a living museum of itself, constantly changing, always demonstrative of its past through its spaces and infrastructures. Building programs change, public spaces adapt to different rituals, and ultimately the city is a consistent evolution of space and form as defined by the characteristics of its society's culture. Each time a building changes use, is renovated, or added to; these moments reflect individual layers of both form and experience. These layers become an accumulation of material and event that grow continually richer through time. At a certain point a building's use may have no relation to its original intent – the original rituals of its spaces are completely replaced by newer uses. Aldo Rossi classifies these types of buildings as urban artifacts, which are characterized by their own history and thus by their own form. He states that "In an urban artifact, certain original values and functions remain, others are totally altered; about some stylistic aspects of the form we are certain, others are less obvious."² The continual transformation of urban artifacts throughout history results in buildings in which one can visually discern the different levels of history in its physical layers. Rossi continues that "there is something in the nature of urban artifacts that renders them very similar – and not only metaphorically – to a work of art."³ The ability for an urban artifact to survive decades or even entire civilizations is due to a variety of reasons. A critical aspect of their survival depends on their architectural and constructional qualities – the monuments of ancient Rome would not have survived to today if they had not been constructed with concrete and stone. Aside from their constructional aspects, many urban artifacts have survived due to their cultural importance. Aside from the grandiose cathedrals of the Middle Ages, many smaller local churches have survived destruction due to their cultural importance in society. In his discussion of the urban artifact, Rossi examines the Italian basilica as a prototype of the urban artifact. In Padua, the city's basilica has stood since the 1300s, underwent numerous program and architectural transformations, and still serves as part of the city's civic network. He states that "... one is always surprised by the multiplicity of functions that a building of this type can contain over time and how these functions are entirely independent of the form."⁴ One can also visually examine the layering of architectural additions and transformations which offer a visual history of style, construction, and ornament to its citizens.

Urban Artifacts

Aside from individual pieces of urban fabric viewed as works of art, the city as a whole can be seen also as a work of art, an accumulation of aesthetic and spatial quality. Jurgen Habermas states that in the nineteenth century, "A desire arose for entertainment, pleasure, and fantasy in the realm of aesthetics, standing apart from the sphere of labor, work and politics, disease, overcrowding, and filth."⁵ The City Beautiful movement was the culmination of a perception that the city itself is a work of art, in which planners used aesthetic beauty as a medium to achieve social control, in the hopes of creating a better

social environment to counter the negative aspects of industrialization around the turn of the 20th century. From an architectural standpoint, the city as a work of art is a logical conclusion as the accumulation of individual urban artifacts. One cannot view the larger whole without seeing the parts that constitute it, and similarly the parts combine to produce the whole. J.N.L. Durand clarifies this in stating that 'Just as the walls, the columns, etc., are the elements which compose buildings, so building are the elements which compose cities.'⁸

Space and Memory

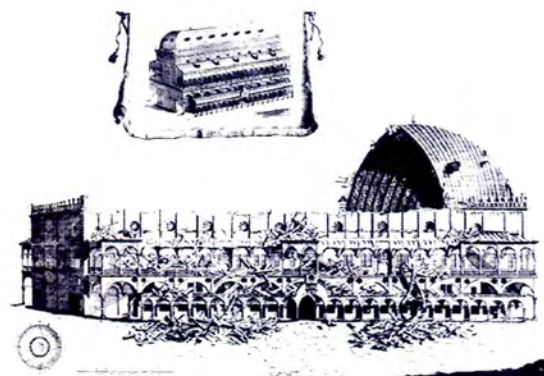
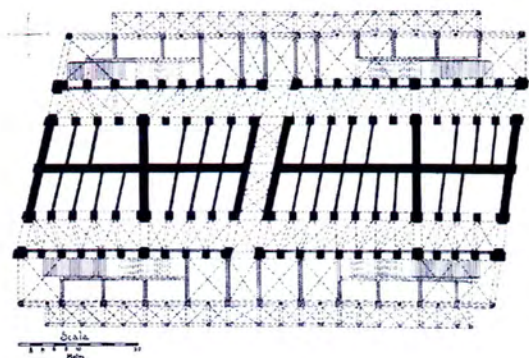
There exists a critical interrelationship between one's memory and the forms that surround the experiences which constitute them. Often, in the space or spaces where such memories had taken place, one can visualize them much more vividly in the presence of the same spaces and forms. Even if one has no personal memories attached to certain spaces, he or she will still visit places of historical significance in order to better visualize and imagine the way in which such events happened in the space. Maurice Halbwachs believed the city spaces that surround one's everyday life often appear to be constant and unchanging, even through massive political, social, and cultural change – regardless, memory is always embedded in some sort of a spatial framework that defines one's perception of his or her memory.⁹

"Now space is a reality that endures: since our impressions rush by, one after another, and leave nothing behind in our mind, we can understand how we can recapture the past only by underwear how it is, in effect, preserved by our physical surrounds. It is to space, the space we occupy, traverse, have continual access to, or can at any time reconstruct in thought and imagination – that we must turn our attention. Our thoughts must focus on it if this or that category of remembrances is to reappear."¹⁰

Clearly, the spaces which define the city have an inseparable link to the visual recollection of events that its citizens recollect. If the composition of the fabric which defines one's memory changes, indeed the clarity of the memory does as well – for one cannot literally, mentally, and visually reconstruct the memory in the same environment where the original event occurred. This space and memory relationship refers specifically to an individual's first hand memory – however spaces are also linked to indirect, communal "collective memory".

Collective Memory

Collective Memory can be defined as a conglomeration of memories that are passed on, shared, and constructed by a culture. Halbwachs drew a distinction in his writings on "Collective Memory" in the 1920s, noting that where tradition ends, history begins. As long as memory stays alive within a culture's collective experience, there is no necessity to document it or fix it as an official story of events.¹¹ As one generation passes its rituals, lifestyles, and memories on to the next, a cultural memory base is cultivated, maintained, and passed through each successive generation. Even though collective memory is different

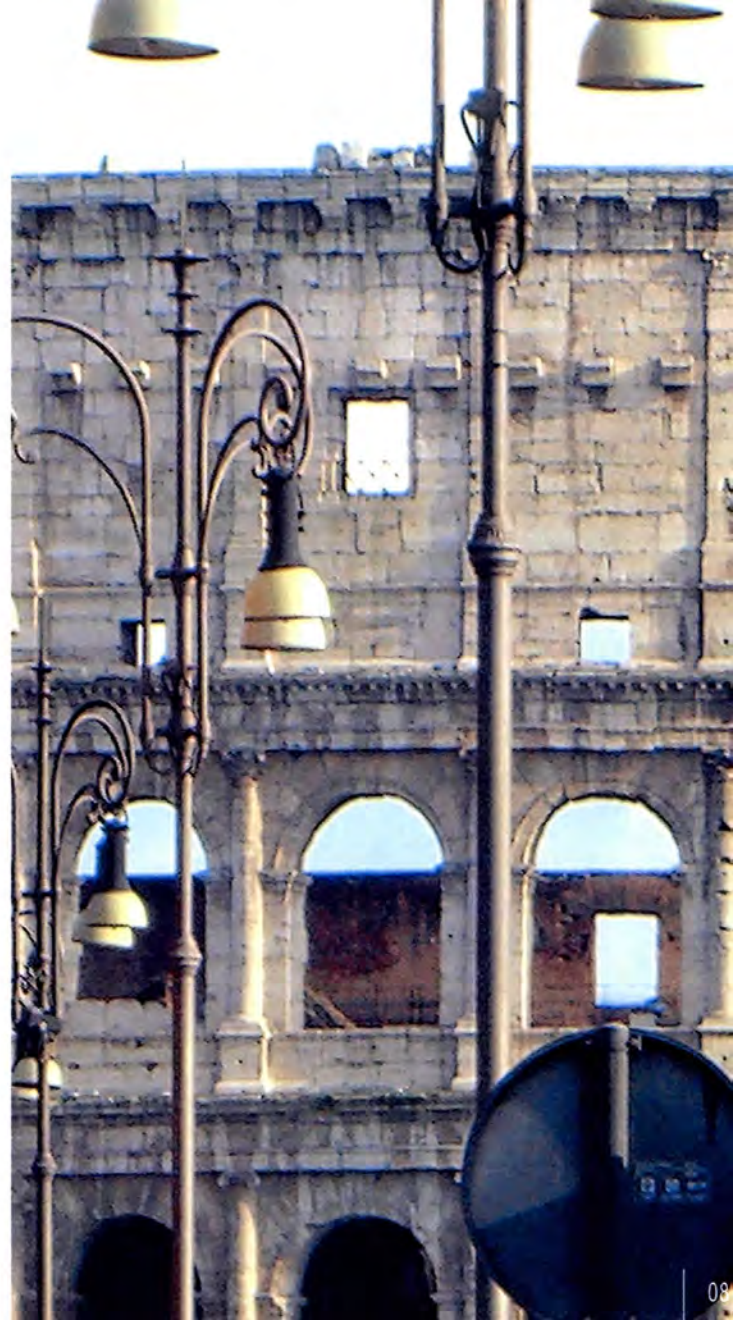
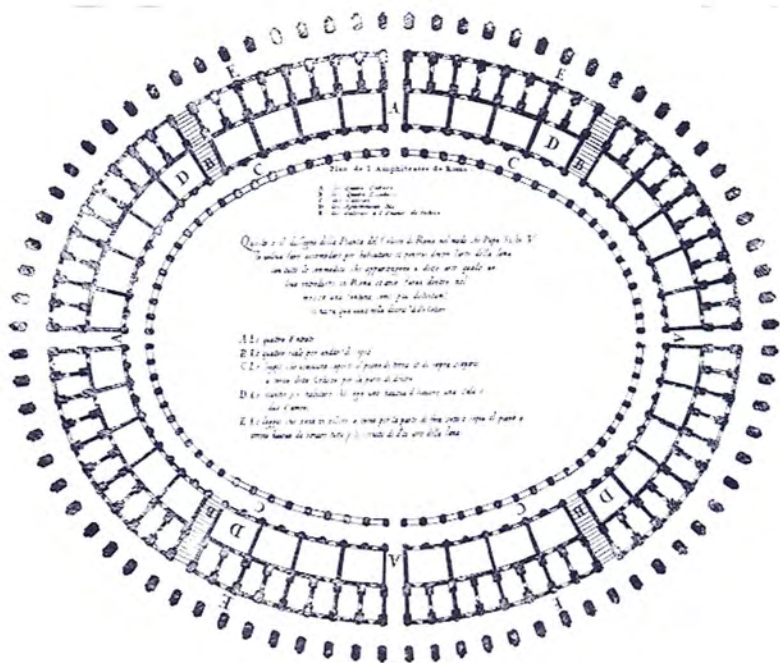


The Basilica in Padua has gone under numerous transformations in its history that are all visible to the passerby.



than individual memory in that a certain space does not activate a personal memory, the spaces of collective memory nonetheless have a critical importance in how one remembers certain events in his or her city. The city of collective memory, defined by M. Christine Boyer, is thus the fundamental relationship between architecture, urban form, and history, for the city is the collective expression of architecture and it carries in the weaving and unraveling of its fabric the memory traces of earlier architectural forms, city plans, and public monuments.¹⁰

One of the manifestations of collective memory is the monument. Originally constructed to commemorate military victories in ancient civilizations, this construction type has developed to commemorate a variety of military, political, artistic, and other cultural events. The collective memory value of the monument is so great that some of the oldest existing pieces of cities are monuments that have lost their original purpose. The French philosopher Poète termed these monuments as "persistences" – physical manifestations of previous cultural occurrences that survive through new and transformed city fabric.¹¹ Each fragment of architecture in the city harbors its own individual history, as well as an expression of its societal and cultural history through its architectural form, construction, color, shape, and detail. As time progresses, these fragmentations begin to have visual layering, physical manifestations of the values and cultures that once inhabited the city. Boyer continues that "It is in these physical artifacts and traces that our city memories lay buried, for the past is carried forward to the present through these sites."¹² Thus the very idea of city fabric acting as a living museum is defined by both the first and second hand memories that the forms which constitute its fabric represent. Cities like Rome, Florence, and New York, all possess multiple layers of building and infrastructure from different eras of time that interweave together to produce a palimpsest of culture. In Rome, for example, there are numerous different layers of both building and city planning that both operate independently and interweave with each other to create a city of spatial and historical layering through incredible differences. Ancient Roman planning, 17th century Papal planning, and 20th century Fascist planning all combine together to create what is truly a city of collective memory. The built forms also become what Rossi believes as urban artifacts – certain Ancient Roman buildings both were planned and reused by the Popes in the 1600s and Fascists in the 1930s. Pope Sixtus V in 1590 announced a plan to reuse the Coliseum as a wool factory with housing for its workers. Benito Mussolini desired a return to Ancient Roman greatness, thus he planned a road directly from his offices to the Coliseum for a promenade of troops, visually displaying his goal for Fascism and Italy. Other pieces of Ancient Roman fabric stand as the strongest urban artifacts in the city. The Theater of Marcellus underwent many programmatic transformations since its construction, including shops, apartments, and many other uses that are completely un-relatable to its original purpose as a theater. Apart from the architectural implications that constant transformation and adaptation of building program and urban planning holds, the cultural implications are just as rich. Representation of societal culture thus almost becomes less important structurally as it is culturally. "In the City of Collective Memory, we find that different layers of historical time superimposed on each other or different architectural strata (touching but not necessarily informing each other) no longer generate a structural form to the city but merely culminate in an experience of diversity."¹³ The value of the fragment in city fabric is critical to the larger understanding of the city as a living museum and a work of art.



Pope Sixtus V's Plan for the Coliseum, converting it into a wool factory with housing for its workers

Fragment and the City

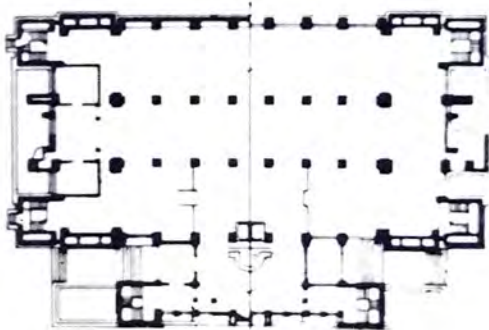
One may judge the quality of a city in its visual pleasures – aesthetically pleasing spaces that relax one's mind or forms that raise visual interest and provoke curiosity or higher thought. The architectural fragment offers another type of visual pleasure – its incompleteness awakens a romantic vision of the past which the mind reconstructs. "These fragments reawaken forgotten memories that have long been dormant, because their original functions and purposes have been erased, allowing the viewer to substitute invented traditions and imaginary narrations."¹⁴ The fragment introduces a level of richness in city fabric that engages the viewer to wonder about its history through form, culture, and society. Returning to the discussion of Rome, specific pieces of Roman fabric have become iconographic of the entire civilization. The triumphal arch has survived in almost entirety in many ancient Roman cities, and has been copied continuously for its representation of victory and success. Its composition has been adapted to a variety of other building types such as churches, galleries, etc. to import its representation of accomplishment and solidarity.

A 20th century example of the fragment is a small pier which was part of the Larkin Administration Building in Buffalo, New York. Designed in 1904 by Frank Lloyd Wright, the building was demolished in 1950 due to both the company's bankruptcy, and needed repairs and renovations to the building that would cost upwards of 10 million dollars. It was decided to demolish the structure and sell the property, and now 50 years later, the only part of the building left standing in its original place is one pier from the fence level along the property line. Followers of Wright raised funds to restore the pier and erect a memorial board with a written and visual history of the building. It is the only link to the memory of what once existed, and it offers a space in which one can recollect or and visually reconstruct what once stood there – in a way it becomes a gateway to memory and imagination of what stood at the site in the past. Clearly small fragments have little impact on city spaces and planning, but how do large amounts of fragments function in the contemporary city? The phenomena of the ruin, in which can consider an accumulation of individual fragments, offers particular urban and spatial effects. In Rome certain urban artifacts have transformed into public space in which the architectural fragments become a point of interest and discovery. The baths of Caracalla, on the edge of the central city core, are one example of this situation. The spaces, which once housed baths, gyms, and exercise areas, are now greenspaces that hold summer concerts, festivals, etc. Thus the scale of the urban artifact is not dependent on the success of its transformation of its program.

Demolition and Memory Crisis

If memory and fabric are inseparable, are they so closely linked that if the fabric were to be transformed or even destroyed, would the memories connected to the spaces and forms be transformed or destroyed too? It is a critical urban planning issue that planners still struggle to balance today. What should be preserved? How much of the city can be redeveloped without losing the memory base that its occupants hold? How much of each individual building can be transformed or removed without losing its memory value? In the late 20th century urban planning saw personally that radical approaches to redevelopment in which existing fabric is almost completely erased led to a memory crisis among the populace. Led by Le Corbusier, the movement sought to eliminate the negative qualities in urban centers, such as over densification, poor air quality, grime, etc. by completely eradicating entire sections of existing city fabric.

According to Boyer, situations in which planners seek to break from any traditional methods are examples of such memory crises. "A memory crisis is provoked, perhaps, by the very desire to establish a rupture, to break with recent traditions, to slay the father as the modernists did and the postmodernists propose."¹⁵ Le Corbusier's Paris urban redevelopment projects typify the historical and memory related ramifications of modernist urban planning. Completely bulldozing sections of Paris, they would be redesigned as the garden city – residential towers in a large urban park, freeing up space for recreation. Modernist's urban planning principles met fierce criticism in Europe and abroad – in the United States many cities went through urban renewal projects which called for the destruction of aged residential blocks in the city center to be replaced by office complexes. The problem is that many cities destroyed virtually all of the city center's residential sections and the removal of a residential permanence in downtowns. By erasing historical references and linguistic allusions, the modernists constructed a disciplined city of pure form that displaced and suppressed memory.¹⁶





Baths of Caracalla - Once a grandiose complex of bathing facilities, its forms are now a backdrop to a major public park in the city

"how much memory was good for the present, both reaffirming our connection with the past and enabling the transmission of moral values that guaranteed social stability? And what were the techniques by which forgotten memories and hidden traces could be recalled to conscious narration?"¹⁷

Preservation, Restoration, and Development

In urban planning, there is constant debate in how to approach redevelopment of already built areas. The value of memory in city spaces and buildings makes it incredibly challenging for urban planners to redevelop city areas without destroying their memories. Many architects charge that one should not preserve full sections of city fabric, like freezing the city in time, nor should they completely destroy what exists to create a new layer of development. David Chipperfield states that "We should not live a bright shining future any more than we should hide in a comfortable pastiche of the past. We must inhabit and ever-evolving present motivated by the possibilities of change, restricted by the baggage of memory and experience."¹⁸ Clearly the approach to urban redevelopment is critical to the continuation of individual and collective memory in each city that a designer encounters. Too little regard to memory and experience and the results are disastrous as was shown by the Modern movement. Too much regard and it becomes nearly impossible to introduce new layering to city plans. This predicament is critical to the evolution of suburban communities in American and abroad. Complete redevelopments would effectively erase the memories of those who grew up in the destroyed fabric, and preservation would create significant problems in relation to the shopping mall since its recent obsolescence is creating massive amounts of vacant space.

To translation of the urban artifact's characteristics into contemporary suburban society requires certain adjustments of the components which one uses to define an artifact. Though suburbs have existed since ancient Mesopotamia, the idea went through a revolutionary boom after the Second World War due to heightened industrial production transferring from war machines to house construction. Suburbs such as Levittown, the brainchild of William Levitt, used mass produced building materials to fabricate almost thirty houses a day in new suburban developments. Along with the housing boom, shopping centers, recreational centers, and other amenities sprang up for new suburban residents. In order to keep up with demand, the focus of these developments was on speed rather than quality. Developers were more concerned with the speed in which suburbs could be constructed, so to relate Rossi's argument, the urban artifact as a work of art is typically not applicable to the suburban phenomena. To compare the architecture of a shopping mall to the an ancient Roman amphitheater is architecturally inconceivable – the amphitheater type was revolutionary in its constructional system, using radial barrel vaults to support its seating; the shopping mall made no significant architectural or constructional advances in its evolution that had not already been explored. However, if one were to pair the two as cultural artifacts in their own contexts, such a lens is much more applicable in how the building functions as an artifact. As much as the amphitheater is an icon of Ancient Roman culture and recreation, the shopping mall has become the icon of suburban recreation. As of today, there exist over 47,000 shopping centers and almost 3,000 shopping malls – almost one thousand shopping opportunities per state. In its heyday, the shopping mall pervaded all aspects of suburban recreation – it became a center of social interaction through retail activity. In order to fully understand the ideas of memory and artifact in relation to the shopping mall, one must first understand its roots, development, rise, and fall in capitalist society.

A 20th Century Artifact

12

A Brief History of Shopping

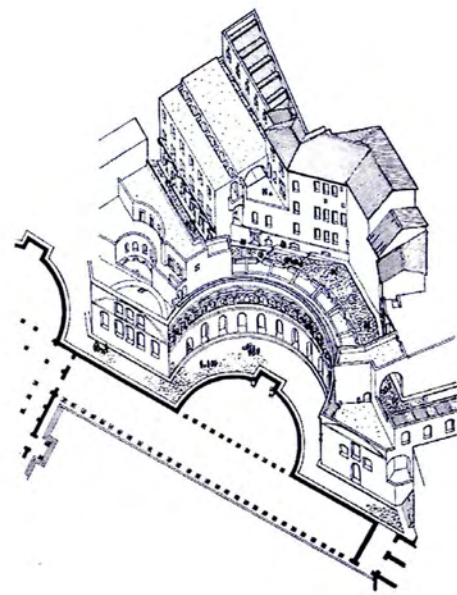
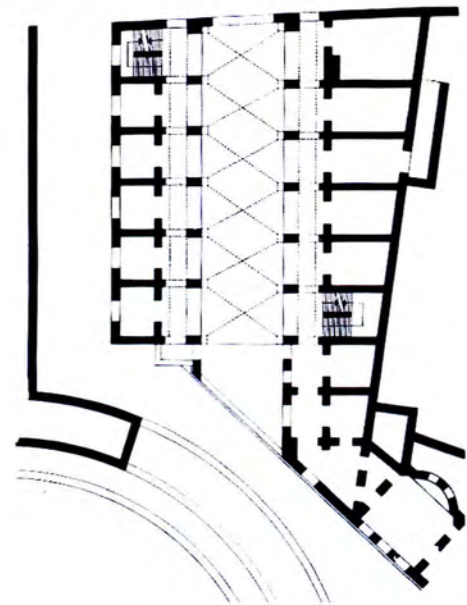
Though it evolved in its practice over time, shopping has existed since the very beginnings of civilization. Before times of currency, bartering was the method in which goods and services were exchanged. However, currency evolved rather quickly in order for a more standardized form of exchange. As early as 2000 BC, certain metals were used for their worth as a substitute for physical goods, balanced to equal value. Eventually, the actual value of the metal varied from the value it represented to be exchanged, and it became standardized and stamped in different increments for a more standardized and efficient method of exchange of goods and services. Eventually the bank note came to be the currency of choice, and in the 21st century the credit card has become widely popular. This method, in which all funds are transferred electronically, opened the door for indirect shopping through catalogues or internet sites, and has revolutionized how buyers pay for their goods.

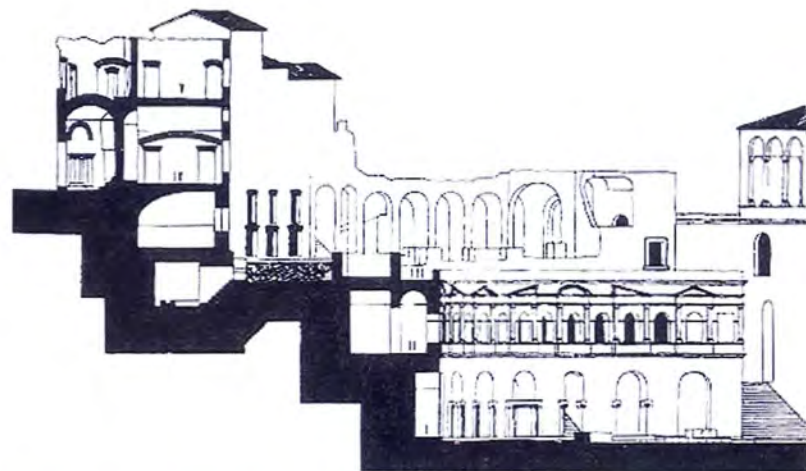
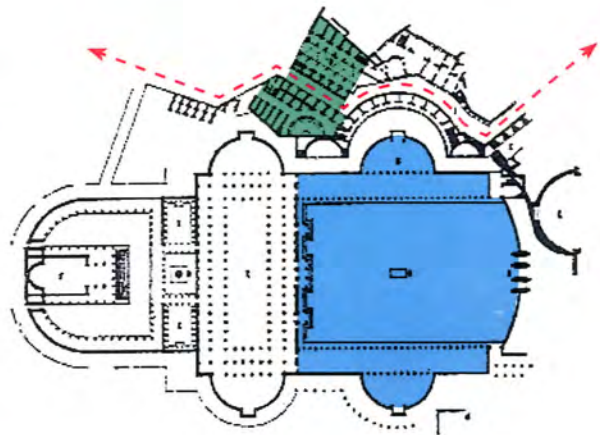
Market Origins

A critical step in the evolution of goods exchange was the congregation of merchants in one place for ease of the customer and increased business. Early these congregations took place in the most convenient space, usually outside. As societies advanced, the spectrum of goods and services expanded as well, thus creating a need for a more stable center for exchange – and ultimately producing semi permanent to permanent built form to house these centers of exchange. A crucial aspect of the market was its close proximity to the city center – in many cases it became part of an urban network of public spaces and buildings. Thus the market had a very public spatial presence and contributed to the overall urban network of spaces in the city.

One of the most influential buildings of ancient Rome the forum of Trajan provided the populace with a complex of market spaces. The emperor Trajan planned the immense project in his name as part of a new set of forums begun by Julius Caesar and Augustus. It was completed around 110 AD and included several libraries, public spaces, the markets, a large basilica, and after Trajan's death, a temple in his honor ordered by Hadrian. While the forum as a whole has its own architectural merits, the markets were a landmark in commercial structure for several reasons. First, to build part of the forum for the exclusive use of the middle to lower social class of the city was a major shift in societal access around the forum. Typically the forum was reserved for the upper class, government, and priests. The architectural language of the markets reflects the occupants in that the buildings materials were stucco faced brick and concrete.¹ Architectural details were expressed in brick as opposed to the typical method of detailing in marble. In fact the markets were one of the only buildings in Ancient Rome that were almost entirely devoid of marble finishing and detailing, which is a clear indicator of its intent to house gritty, everyday

The Market Network





Form of Trajan | Market's of Trajan - an early example of the marketplace serving dual purpose in both city circulation coupled with market stalls.



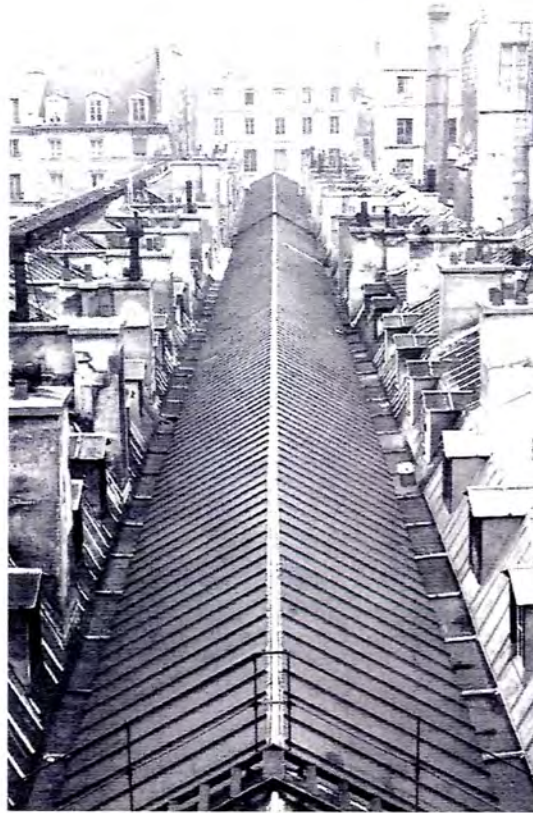
Merato Nuova - the market space is a planned segment of a larger circulation network leading into the main square of the city

use by the people of the city. It functioned largely as a fish market at one point and had very advanced amenities, including fresh running water. Individual market units functioned on a two level system which offered housing for the stall owners above their own spaces. The markets were also significant in terms of site treatment, being embedded into the Quirinale hill. Due to the hill's grade, the market spaces are embedded into the hillside, and the circulation of the building serves not only as circulation for the markets themselves but also as a path down the hill from the city into the forum.² Having dual circulation was a critical element in the urban success of the markets and their emergence as a precedent in the architectural world. Not only does a dual purpose circulation increase business by providing high amounts of pedestrian traffic, but it also continually activates the market space and strengthens its success on an urban occupation level.

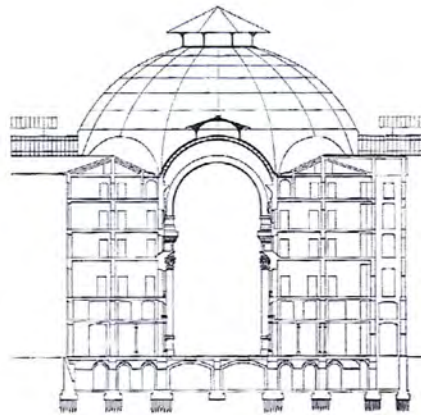
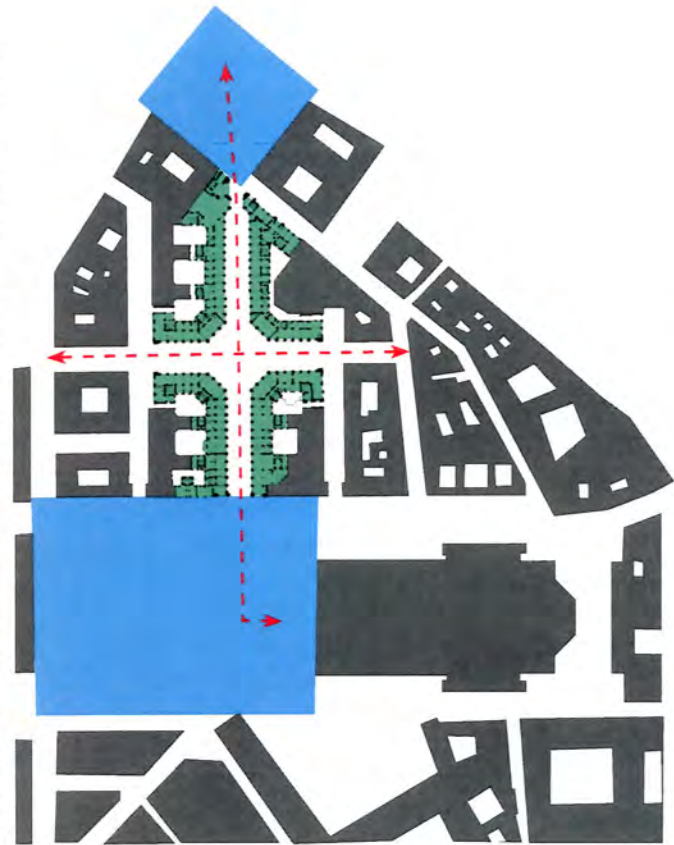
After the fall of the Roman Empire, advancements in commerce slowed drastically over the next millennium. The Mercato Nuovo in Florence, Italy, one example of planned market spaces in the city, was built by Grand Duke Cosimo I around 1550. Originally intended as a silk and gold market space, the program has not changed in over 500 years, still holding a daily market that focuses on tourism, leather, and crafts. Design by Giovanni Battista, it is essentially an outdoor portico, the structure a field of columns which support a vaulted ceiling. The structure allows for flexibility of space for the market users while protecting them from the elements. Over time the market became engulfed by continuous building, and eventually became a part of the Jewish ghetto, which was the densest and poorest sector of the city. After Florence's bid to become the capital of unified Italy in the late 19th century, several attempts were made to modernize the urban fabric, several of which included completely demolishing most of the ghetto with much larger scale buildings. However this clearing gave the market a new presence not only in its displacement from the new urban plan but also in juxtaposition of scale and spatial clearing in its immediate context.

Towards the 19th century, the advent of the Industrial Revolution meant radical change in almost every facet of society and how it functioned. Commerce was one of the most affected pieces of society, and this change was realized in the streets of Paris, leading to the development of a new building type, the Arcade.³ Architects sought to enclose business streets as an amenity for the consumer, using advancements in iron and glass technology. One of the most significant early arcades is Arcade Choisei in Paris, sited along the western edge of the city near the Palais Royal. It is one of the best examples of the early arcade type; the street character of the space is very definitive. The circulation of the arcade runs parallel to one of the squares in Paris linked to the Opera house, and thus the space of the arcade becomes part of the network of city circulation in the area.⁴ This is a critical point in the architectural and urban value of the arcade, in that it becomes a piece of the larger urban circulation network and adds value to the infrastructure of the city. Benefits of the Industrial Revolution allowed for the passage – existing buildings were retrofitted with a cast iron mullion roof with relative ease, allowing customers to enjoy moisture free shopping at any time. There were drawbacks, however - enclosing such a tightly proportioned space meant that there was little to no ventilation, which led to horrid odors that were trapped in the spaces as well as incredible solar heat gain.

Arcade



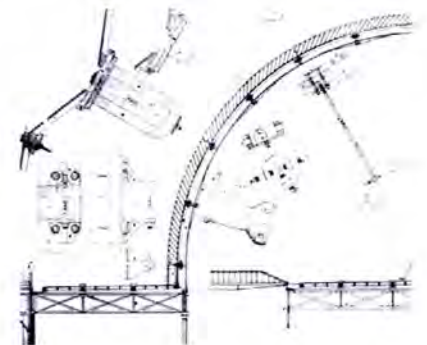
The Passage Choisei and its proximity to major urban space. French arcades developed into a network that strengthened pedestrian circulation throughout the city



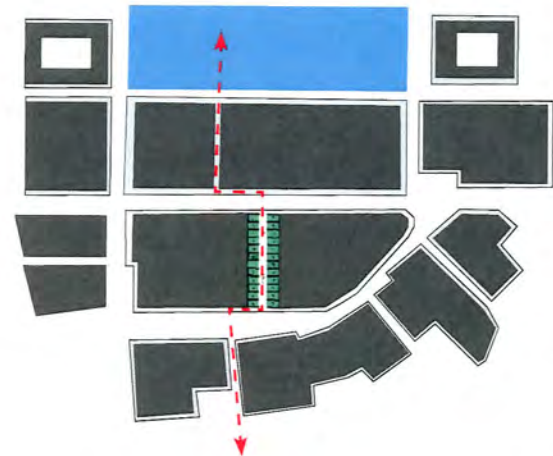
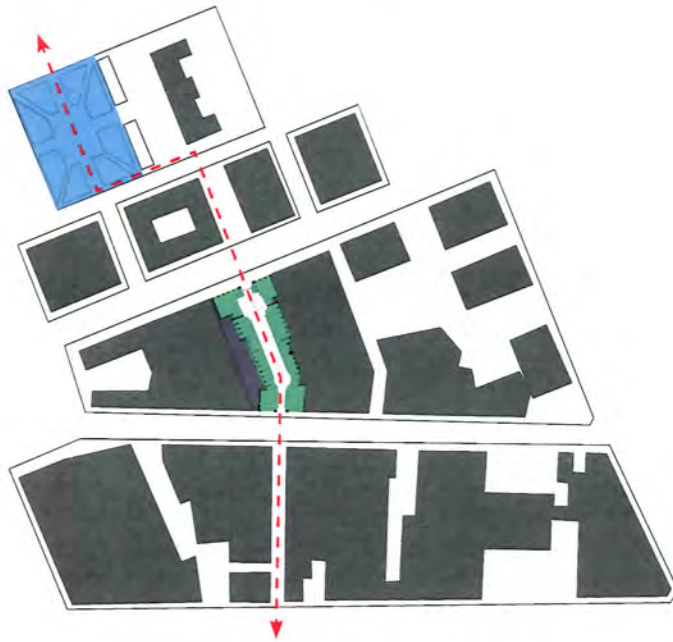
Unlike its French counterpart, the Italian Galleria was the end result of selective demolition of existing fabric in order to strengthen urban relationships.

Other arcades became part of urban renewal projects to strengthen urban connections and circulation. Unlike many of the Paris arcades that simply covered existing spaces, several Italian arcades, renamed gallerias, were a result of the placement of passage networks in existing fabric. In Milan, the galleria Vittorio Emanuele II, c. 1865, was constructed to create a pedestrian connection between the square of the main cathedral and another important square.⁵ The building has two bisecting vaulted spaces, all connecting major streets in the city center. Thus, just like the markets of Trajan almost 1700 years earlier, the building has a dual purpose, the most important being a piece of pedestrian city infrastructure and the second serving as a primarily retail marketplace.

Although it was not part of an urban network, the Crystal Palace was critically important to the evolution of the shopping structure. It was designed by Sir Joseph Paxton and constructed in Hyde Park around 1851 in an incredible span of only nine months. It utilized all that the Industrial Age had to offer – standardized, interchangeable parts, cutting edge construction equipment, new building materials – these all combined to create a light, strong, efficient structure, which could house almost a million square feet and 14,000 people.⁶ Its construction methods became a standard for many department stores around the turn of the century. In the United States, arcade planning and the department store were implemented successfully in American cities. While arcades in European cities sought to slice through dense urban fabric, their use as a pedestrian connector was weaker in such American projects. The advent of the automobile had a huge effect on pedestrian circulation in growing cities, and the urban benefits of the arcade were less necessary in American cities as they were in Europe. However, projects such as the Cleveland arcade still encourage pedestrian circulation networks within the city; function both as a passage and as a destination for retail interaction.⁷ The Arcade in Providence works similarly, if at a smaller scale, by providing a passage through a very dense sector of the city. Regardless of their pedestrian successes, the arcade type became virtually obsolete for its urban planning benefits with the growth of automobile development. As the auto became an increasingly important facet of American life, there emerged the need for a new retail center that would be designed specifically for automobile use, and the very infancy of contemporary suburban shopping began.



The Crystal Palace and its embracing of new building materials and construction methods changed the way retail structures were built.



Significant Shopping Center | Mall Developments in the 20th Century

Date	Name Location	Status	Significance
1916	Market Square Chicago, IL	Open	Arthur Aldis designs an integrated shopping complex of 28 stores, offices, and apartments, with parking accommodations for the wealthy Chicago suburb of Lake Forest. It shares a claim as the first planned automobile-centered shopping center.
1924	Country Club Plaza Kansas City, MO	Open	Jesse Clyde Nichols create Country Club Plaza adjacent to a planned suburban residential district. It claims distinction as the first automobile-centered shopping center built on a unified plan and operated by a single developer.
1928	Grandview Ave. Center Columbus, OH	Unknown	Donald Casto designs a strip of 30 stores (including four super-markets) and off-street parking for 400 cars, not associated with an exclusive residential area. This general plan becomes the prototype of shopping centers for several decades.
1931	Highland Park Village Dallas, TX	Open	Hugh Prather designs this innovative center, adjacent to a planned residential community, with stores facing toward an inner parking lot. It was not completed until after World War II.
1932	Park and Shop Washington, D.C.	Demolished	The first important neighborhood shopping center in the Washington D.C. area was conceived by Herbert Shannon and Morton Luchs, and designed by Arthur Heaton. It served as the model for similar centers through the D.C. metropolitan area.
1938	Silver Spring Center Silver Spring, MD	Open	This example of an early super-market anchored shopping center with 19 stores and off-street parking was designed by John Eberson.

Date	Name Location	Status	Significance
1943	Willow Run Center Detroit, MI	Unknown	One of several shopping centers built during World War II to serve housing projects built adjacent to war-time industries, in this case the Ford-operated B-24 plant.
1947	Broadway Center Los Angeles, CA	Open	This early regional shopping center was originally anchored by a supermarket, but has been enlarged and modernized several times.
1950	Northgate Center Seattle, WA	Open	John Graham Jr. designed a modern shopping center with two rows of stores either side of an open-air pedestrian mall and anchored by department stores at each end.
1951	Shoppers World Framingham, MA	Open	First two-level shopping center, with department store anchors and a dumbbell floor plan.
1954	Northland Center Southfield, MI	Open	World's largest when built. Designed by Victor Gruen, with 110 stores on two levels in a cluster layout, with a department store anchor at the center.
1956	Southdale Center Edina, MN	Open	The first fully enclosed shopping center was designed by Victor Gruen and developed by the Dayton department store, which was one of the two anchors.
1966	The Galleria Houston, TX	Open	One of the largest malls in the US features a vaulted glass ceiling, inspired by Italian arcades.
1970	Woodfield Mall Schaumber, IL	Open	First super-regional mall.
1992	Mall of America Bloomington, MN	Open	This four-story mall, with amusement park, aquarium, and several full-service restaurants, in addition to a food court, is the largest (as of 2005) in total area.

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Malltopia

*"Take 100 acres of ideally shaped flat land. Surround same by 500,000 consumers who have no access whatever to any other shopping facilities. Prepare the land and cover the central portion with 1,000,000 square feet of buildings. Fill with first-rate merchandisers who will sell superior wares at alluringly low prices. Trim the whole on the outside with 10,000 parking spaces and be sure to make same accessible over first-rate under-used highways from all directions. Finish up by decorating with some potted plants, miscellaneous flower beds, a little sculpture, and serve sizzling hot to the consumer."*¹

Victor Gruen, considered by many to be the father of the modern shopping mall, was born into a Jewish family in Vienna. He grew up in Vienna, studying architecture at the Vienna Academy of Fine Arts. When Germany took over Austria in 1938 he emigrated to the United States where he started his own design firm. In 1954, Gruen designed the influential Northland Center open air shopping mall near Detroit, as a response to changes in urban form dictated by the automobile in postwar America. It became the model, the prototype for a suburban shopping center.² He also designed the first fully-enclosed mall, Southdale Center in Edina, Minnesota, which opened in 1956. Southdale was revolutionary in both its complete enclosure as well as its unrealized urban plan - it was meant to serve as a catalyst for a full-fledged community. The mall was commercially successful but the surrounding non-commercial activities were never realized.

Gruenism

The aim of the shopping mall was to recreate the delicate mix of commercial, residential, office, and public space translated from Europe to the American Suburb. These utopian projects were shaped by capitalist dreams, and as so, they came to highlight tensions between the influence of commerce (which made malls possible) and the planning principles for successful societies. As Gruen's shopping mall achieved wider and wider success, developers took its design and began replicating it without any sense of self control. Malls were constructed across the street from each other in true capitalist style, spurring fierce competitions for the same customer base. Although Gruen himself was responsible for the double-level enclosed shopping mall type and his firm designed dozens of edge-city enclosed malls in the US, he bitterly disavowed the extent of shopping mall repetitiveness.³ He became so horrified by the commercial twist that the shopping mall inherited by developers, the same design replicated by hundreds of cookie cutter consumer traps around the country, that he fled back to Vienna and never returned.³ The Utopian dream that the Viennese architect had envisioned had been reduced to a money-making machine, devoid of any mixed program and solely relying on retail and commercial success, the only focus of its capitalistic developers.

A Typical Mall

Organization

Most shopping malls fall into two organizational categories – the dumbbell and the cluster. The dumbbell pattern was the preferred type in early malls, using a department store as an anchor on each end of the mall with a circulation swath connecting the anchors and small specialty stores lining its path. The other organization of choice is the cluster formation, which groups anchors and specialty stores together, while circulation is generated by the interstitial space between each group. Most malls are not strictly a cluster or a dumbbell plan – the two planning methods are often combined to generate the most efficient profit-making organization. In terms of site, almost every suburban mall is placed in the center of a ring of parking spaces for its consumers. Its placement offers the closest access for automobile travellers to enter the mall. Developers prefer to site malls as close as possible to major routes or highways in order to create a quick and easy sequence from highway to mall.

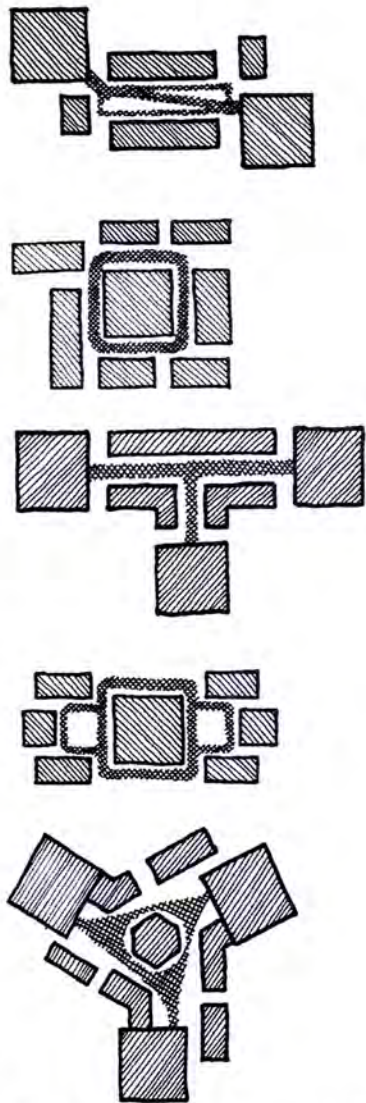
Construction

Typically most malls use the most cost effective materials in their construction – long span steel frame or precast concrete structure, with CMU bearing walls if needed. Exterior walls typically follow convention, usually a masonry base of brick or CMU and covered with stucco where aesthetics are needed. Interior walls typically use steel stud construction covered with gypsum board for easy demolition if store layouts need to be rearranged. Floors are usually a variety of tile, from linoleum to terrazzo to carpet in some cases, depending on the budget and quality of stores that the mall contains. Climate control was one of the largest advantages of the enclosed shopping mall, offering an ideal climate for shopping year round regardless of where the mall is sited. Most malls made somewhat of an attempt to utilize natural light in the roof systems, although attempts were usually limited by budget. Developers view the shopping malls as having a short life span, with no longer than 20 years before renovations are usually considered to be needed.

Programmatic characteristics

The base of every shopping mall is to have multiple anchor department stores which provide a customer base for the smaller specialty stores. Typically retail comprises at least 90 percent of the entire program of the structure. Other common facets in mall programs are a fast food eating area, independent restaurants, and often a movie theater. Sometimes malls would attempt to include civic program, such as libraries, police stations, post offices, or meeting halls. This idea never really took off because it started to deter from the profit focus of the mall's owners. The balance of different retail in a mall is so critical that even the slightest tweaking of commodities offered can majority transform the mall's success or decline. "Even with the limited formula that the mex establishes for each mall, minute variations in the selection and location of stores can be critical."¹⁵ Indeed, the selection, placement, and relationship of each store to the larger whole of the mall is a delicate web of store relationships that can be completely imbalanced with the closure or relocation of any one store. The job of constantly rearranging the network of stores is an incredibly critical task dependent on the mall's success or failure.

In all, the very purpose of the shopping mall, a money making machine, led developers and researchers to devise a conglomeration of formulas, check lists, budget suggestions, and organizational strategies, and the like to create the most cost effective structure for entrepreneurs.

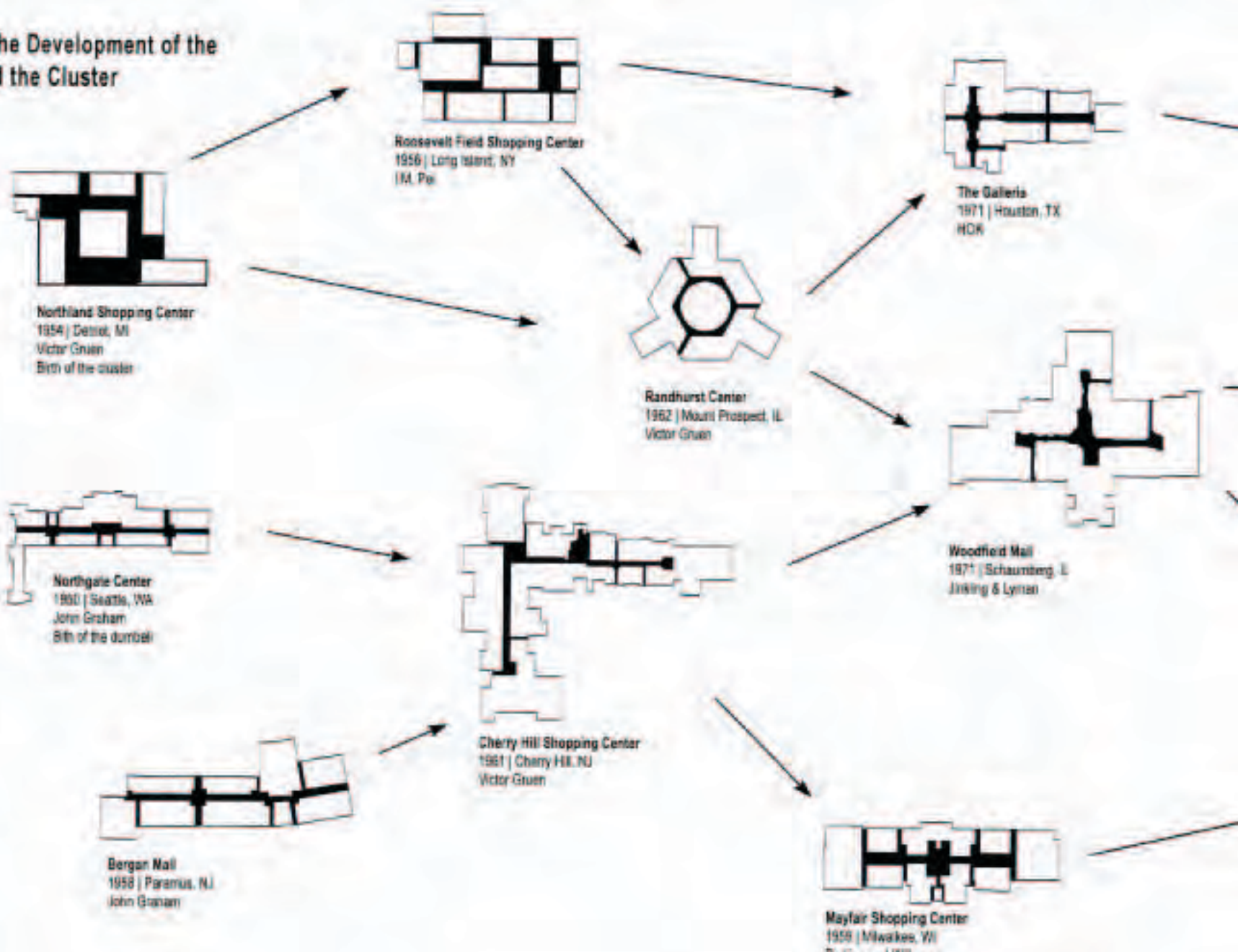


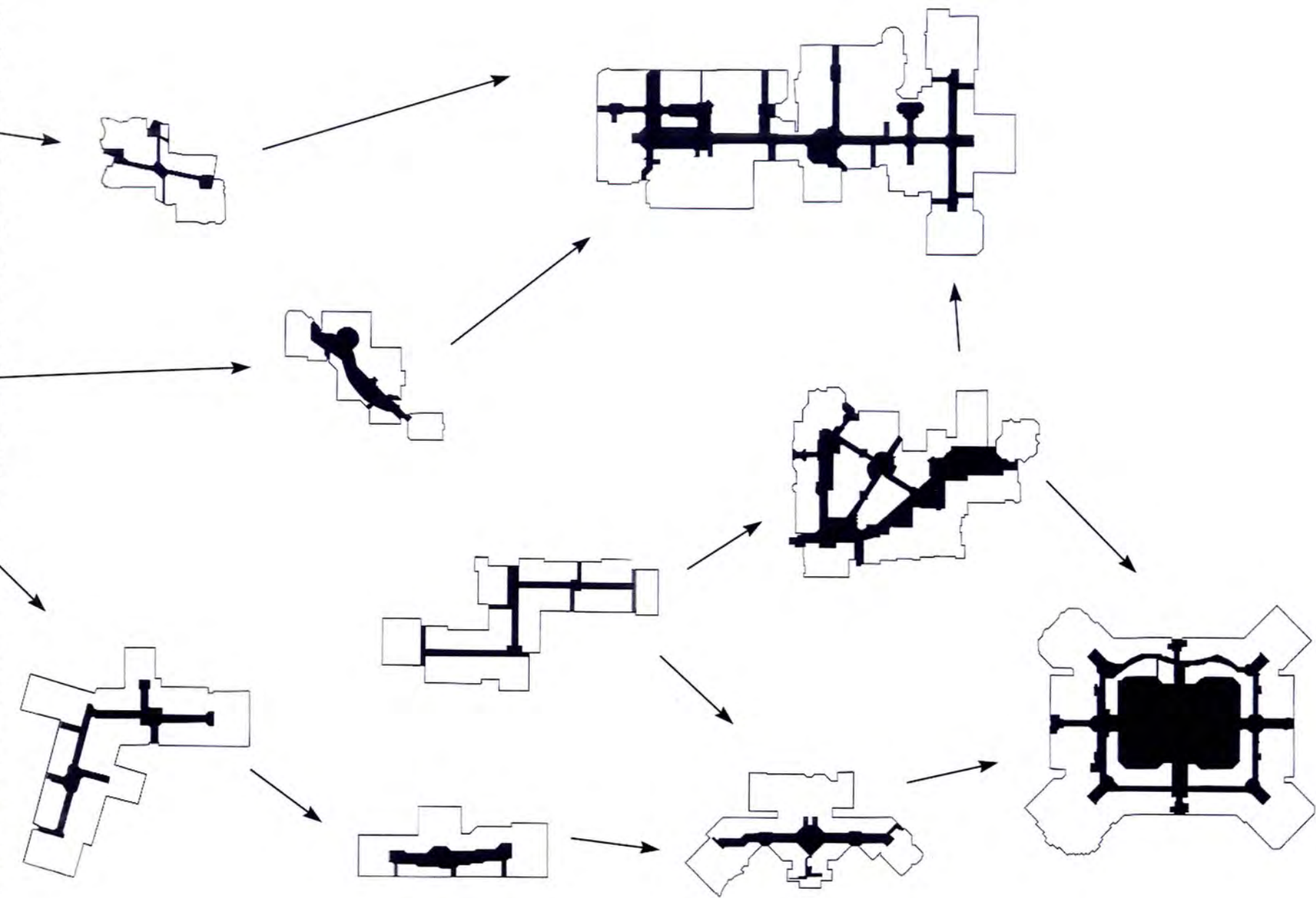
Various schemes for mall planning proposed by Victor Gruen, who believed the shopping center could be rationalized into a completely efficient, scientific money making machine

REALIZATION	
Exterior drains and sewers	Glass block
Catch basins and manholes	Mortar
Backfill	Hardware and accessories
Excavated material	Masonry labor
Granular fill	Clean and point
Granular base under floors	Silicone treatment
Compaction	
Finish grading	CARPENTRY
Guard rails and curbs	Materials
Flagstone and dry stone walls	Lumber
	Plywood
CONCRETE	Vapor barrier
Formwork	Insulation
Concrete	Plastic laminate
Supply	Builders' hardware
Admixtures	Labor
Winter charges	Rough framing
Heating and protection	Millwork and paneling
Placing	Finish hardware
Reinforcing steel	Washroom accessories
Supply	Built-in items—concrete and masonry
Placing	Supplied items—miscellaneous iron
Cement finishing	Pressed steel frames
Wire mesh	
Supply	MISCELLANEOUS SUBTRADES
Placing	Pile foundations
Plastic film under floors	Caissons
Expansion and control joints	Structural steel
Saw cuts	Steel joists
Foundation coatings	Steel decks—corrugated and cellular
Grouting and patching	Asbestos decks
Finishing exposed concrete	Hollow-core slabs
Perimeter insulation	Precast concrete structure
MASONRY	Prestressed concrete structure
Masonry materials	Lift slabs
Brick	Laminated wood structure
Concrete block	Exposed aggregate work
Terra-cotta	Asbestos siding
Glazed brick	Prefinished metal siding
Glazed block	Cut stone and granite
Ornamental block	Artificial and precast stone
Gypsum block	Roofing and sheet metal work
Siporex block	

A checklist of a larger mall development handbook typical of 1970s developers manuals. The mall had become such an efficient building type that developers already knew the limits and means of construction for every aspect of the building type.

Synthesis | The Development of the Dumbell and the Cluster





"Public" Space

Definition of public and private space in a shopping mall leads to an awkward dichotomy between the two types of spaces. The desire to create a social shopping environment led many malls to recreate the concepts of the public square in a private building, focusing on the positive aspects of the city like density and pedestrian bustle, while being able to edit out the negative, like weather, traffic, and poor people.⁶ Public events like concerts, dances, and speeches were often invited to take place in the shopping mall. Even "mall-walkers"- groups of elderly that arrive at the mall early to walk laps around the measure corridors, use its spaces as they would in a public park.⁷ So blurry came the line between private mall ownership and public activities that took place in its walls that in the 1970s, the Supreme Court confirmed that an Oregon mall had the legal right to claim the mall as private space, enabling its owners to ban any activity they considered detrimental to a pleasant mall experience. This ruling gave mall owners completely control over what happened in the mall spaces and who could use them. They could remove any shoppers who they deemed to be disturbing the overall quality of the shopping environment – in turn, as much as the mall is a social gathering place, its owners have complete control in how the space functions. Thus the public space of the mall is only a perception, a faux place of gathering dictated by mall owners. Typical signs explaining this dichotomy in malls read – "Area in this mall used by the public are not public ways, but are for the use of the tenants and the public transacting business with them. Permission to use said areas may be revoked at any time". It is a disturbing irony, in that mall owners strive to recreate city life in their malls but can at any time control the interactions among their shoppers. The very environment they chose to replicate they also control, which effectively eliminates any parallel to actual public spaces, which allow its users much greater freedom of expression.

Pop Culture | Mall Religion

The mall's iconic status can easily be seen in how it is represented as an amenity to a city. In the 1970s and 80s, malls covered postcard displays, boasting a shopping experience unaffected from climate and daylight. On top of becoming a landmark for each suburban town, the shopping mall phenomena invaded pop culture too, producing a variety of board games such as Mall Madness and Park & Shop – it even became a familiar setting in the movie industry in films -

- Fast Times at Ridgemont High
- Dawn of the Dead
- Clueless
- Valley Girl
- Mallrats
- Scenes from a Mall

Also, in the literary world, the mall became a familiar setting in which authors sited their novels. Some of the more familiar titles are –

Bagwell, James. *Mall Murder*

Bogasian, Eric. *Mall: A Novel*

Brenchley, Chaz. *Mall Time*

Busselle, Donald. *The Enchanted Mall and Other Stories*

Hebert, Ernest. *Whisper My Name*

Huff, Tanya. *Long Hot Summoning*

Pearson, Ridley. *The Seizing of Yankee Green Mall: A Novel*

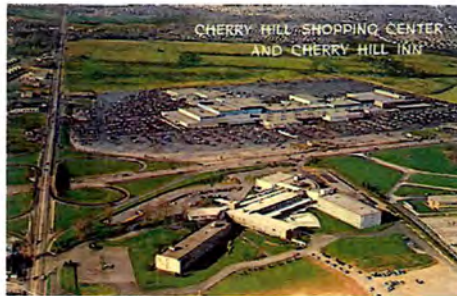
Somotow, S. P. *The Ultimate Mallworld*

Sucharitchal, Sumtow. *Mallworld*

Some believe that such an enormous influence on suburban culture would come to rival the importance of organized religion. The frequency in which families visited malls in the 1970s became comparably equal to the frequency in which typical religions required their parishes to attend services. The mall experience displays many similarities to religious rituals. Natural light and water, when referred to religion, are both symbols of purity and a higher power. In the shopping mall they are deployed to enhance a shoppers experience – one can conclude that perhaps the shopping mall became a sort of secular cathedral in which the focus of the structure is not to worship a higher power but to worship the consumer. "Shopping malls are temples of trade, churches of consumption, synagogues of excess, or mosques of the market."⁸ So if one were to define what faux religion that the mall is devoted to, it must be consumerism and capitalism. Even the typical mall organizational system bears a distinct similarity to gothic cathedral organization. Could one go so far to say that in one thousand years historians will view a ruined shopping mall as a temple to trade in an increasingly secular society just as historians now study ancient Greek and Roman temples?



Mall culture invaded pop culture, as represented by numerous board games which sought to recreate the shopping mall expedition at home.



Rising in importance in the suburban landscape, the shopping mall became an icon for each community, boasting its own unique design aspects or center pieces. So proud were its citizens that the mall often wound up on the town's postcards

Mall Generations

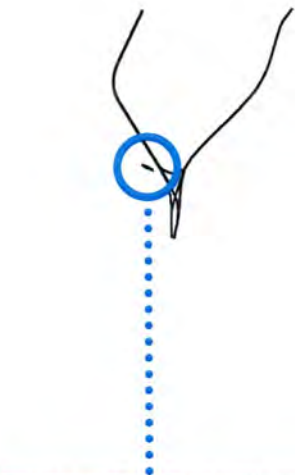
If one is to categorize malls in a time and size network, three different groups of malls emerge both in time and in scale. From the mid to late 1950s towards the early to mid 1980s, the majority of malls were usually constructed between 400,000 and max 1,000,000 ft². Malls of this size were usually one to two stories and referred to as regional mall. Its customer base was rooted in the immediate region or county in which the mall was located. A major aspect of mall competition was square footage totals, and due to this trend as time evolved so did the total square footages of shopping malls. According to Reilly's Law of Retail Gravitation, shoppers will patronize the largest shopping center they can get to easily – naturally under this law, it became the rationale for larger and larger malls positioned increasingly closer to highway infrastructure.⁹

The second generation shopping mall, often referred to as the super-regional mall, typically constructed after the 1970s and the initial mall boom that invaded America's suburbs, was notable larger than its earlier counterparts, typically beginning at around 1,000,000 ft² and growing upwards to almost 2,000,000 ft², with a consumer base that would sometimes transcend cities or even counties.

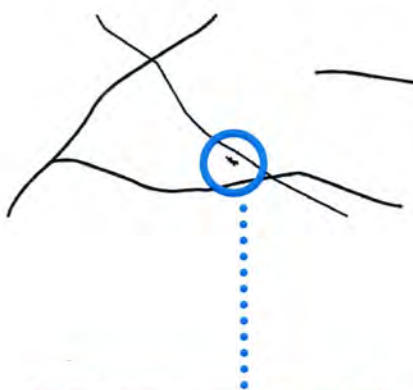
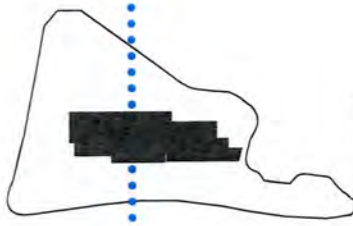
The third and most recent generation of mall, labeled by developers as the megamall, reached levels of scale previously thought impossible. In 1981, the West Edmonton Mall set the standard for the Megamall concept. Encompassing over 5,000,000 ft² in total space, it was one of its only kind until the early 1990s when developers sought to conquer the successful second generation malls. The most notable of these Megamalls is the Mall of America in Bloomington, MN – however, there are 18 other malls that boast at least 2,000,000 square feet of retail space alone.

Spheres of Influence

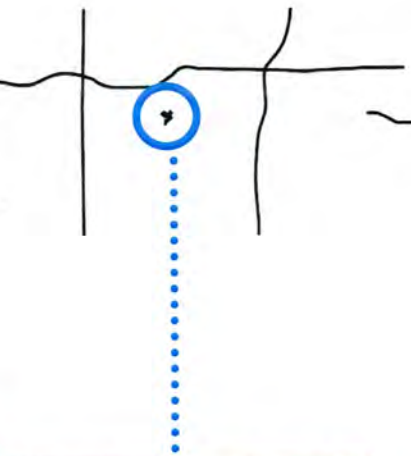
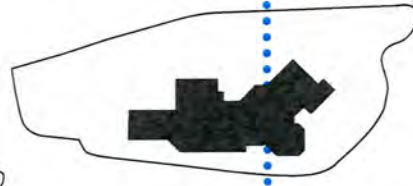
In planning and developing a shopping mall, developers analyze the immediate area and the proportion of retail space to residential space to decide if planning a mall will be feasible and generate profit after expenses. Every mall constructed has always had the hopes of attracting a customer base that is completely unaffected by other area malls. However retail tactics led to developers build several or more malls in highly dense regions, which in turn created overlapping spheres of influence for each mall. The end result is a weaker customer base for the weaker of the malls. Roughly for each 20,000 feet of retail space attracts 1 radial mile from the mall's center. For example, smaller first generation malls, like the Crystal Mall in Waterford Connecticut, have a sphere of influence of around 35 miles ($730,000 \text{ ft}^2 / 20,000 \text{ ft}^2 = 36.5 \text{ mi}$). Megamalls like West Edmonton or Mall of America carry influence up to several hundred miles or more, drawing a customer base several states or even countries away.



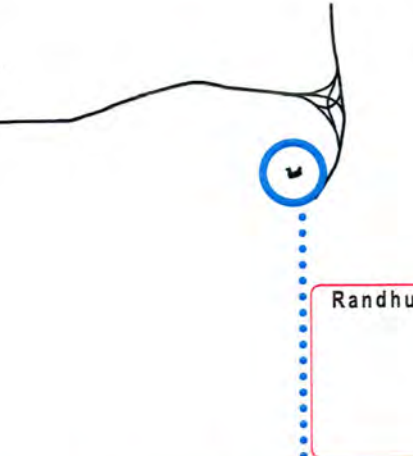
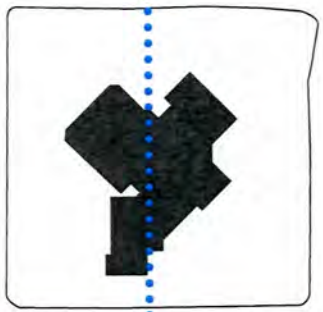
Rhode Island Mall | Warwick, RI
520,000 ft²
2,200 Parking Spaces
2 Levels, 60 Stores
Opened in 1968
2 Anchors



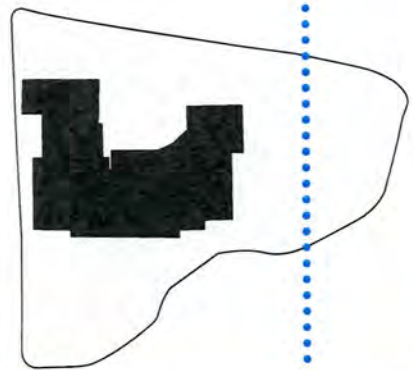
Crystal Mall | Waterford, CT
786,000 ft²
3,100 Parking Spaces
2 Levels, 137 Stores
Opened in 1984
4 Anchors



Southdale Center | Edina, MN
800,000 ft²
5,200 Parking Spaces
3 Levels, 72 Stores
Opened in 1954
3 Anchors

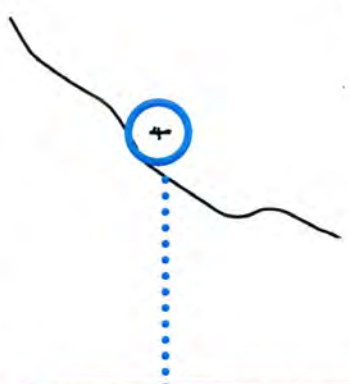


Shoppingtown Mall | Dewitt, NY
940,000 ft²
6,700 Parking Spaces
2 Levels, 110 Stores
Opened in 1975
5 Anchors

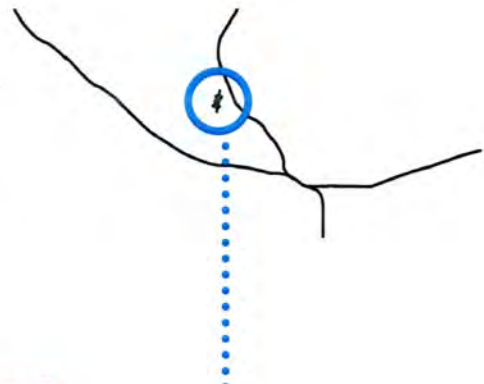
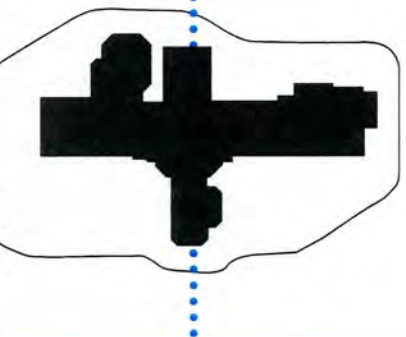


Randhurst Mall | Mt. Prospect, IL
1,000,000 ft²
4,800 Parking Spaces
3 Levels, 114 Stores
Opened in 1962
3 Anchors

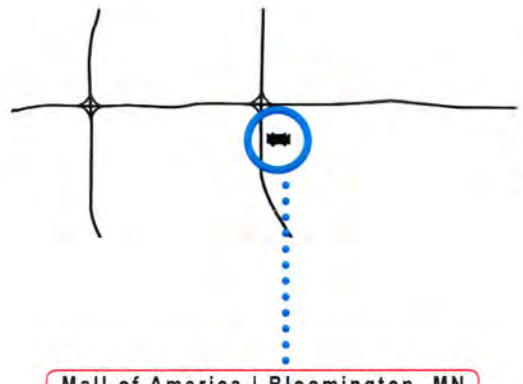
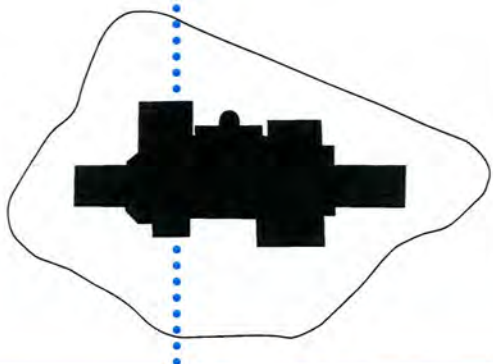




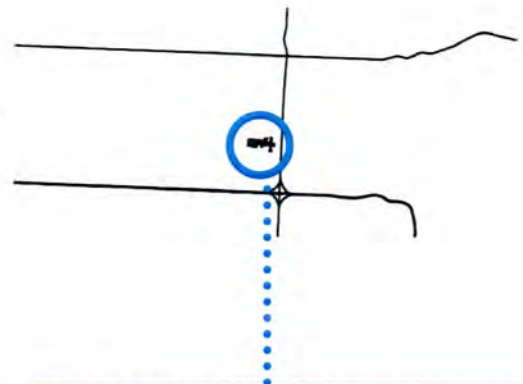
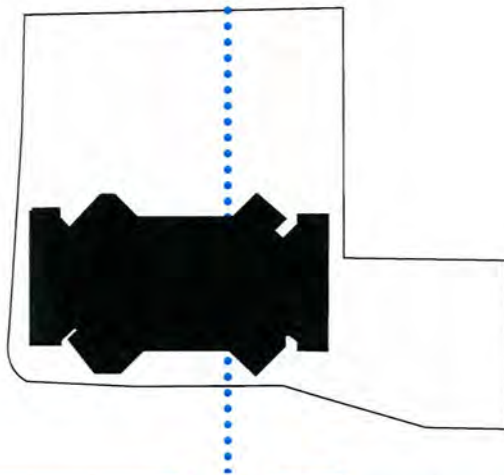
Great Northern Mall | Clay, NY
1,150,000 ft²
7,100 Parking Spaces
1 Level, 80 Stores
Opened in 1988
4 Anchors



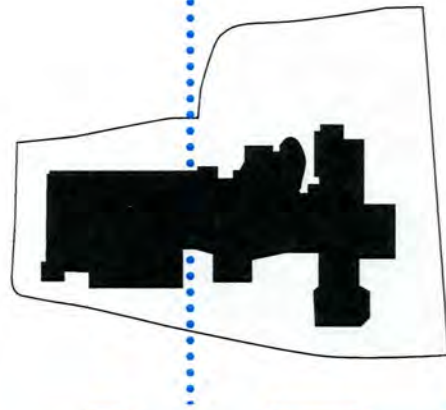
Carousel Center | Syracuse, NY
1,500,000 ft²
9,400 Parking Spaces
3 Levels, 150 Stores
Opened in 1990
6 Anchors

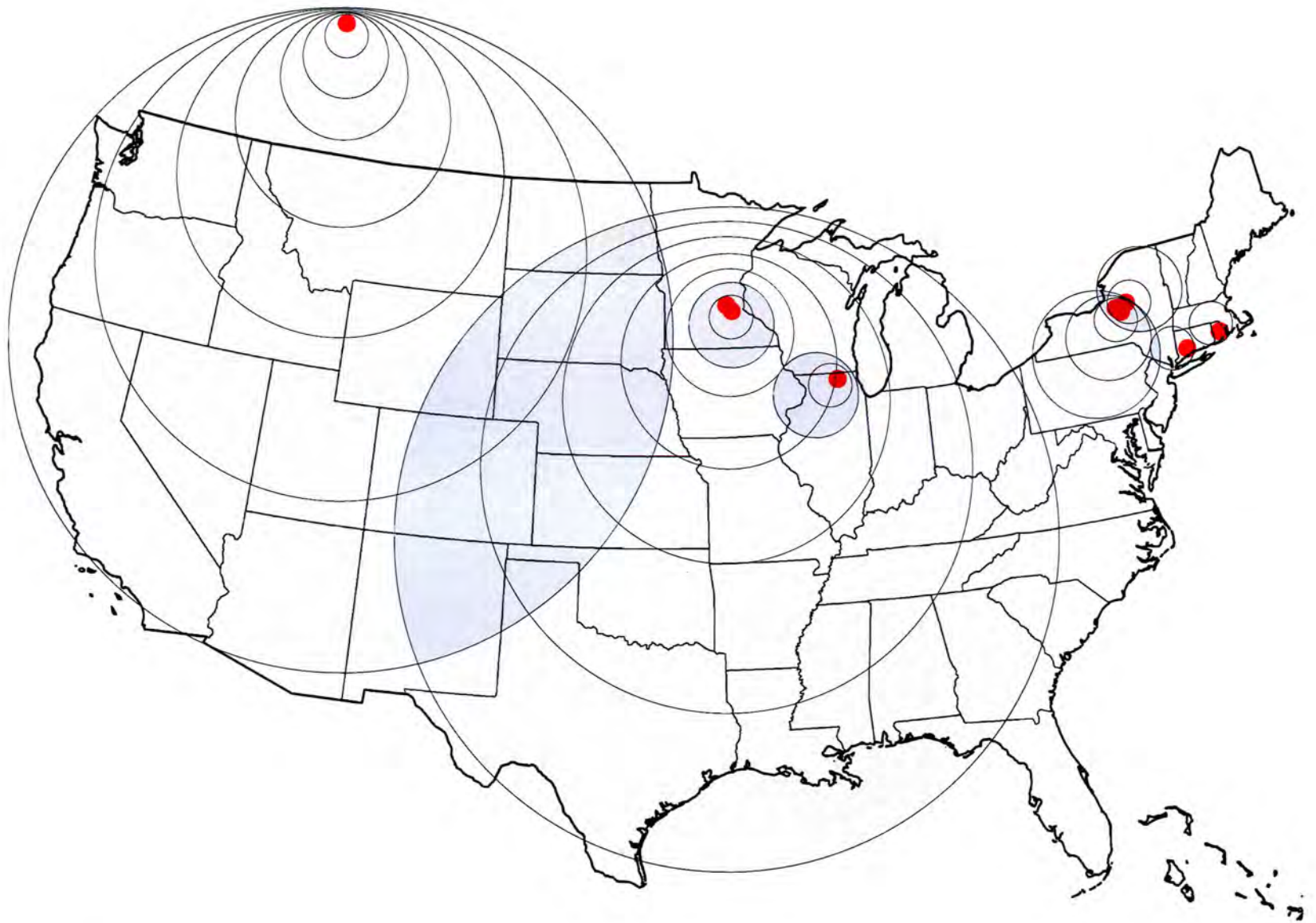


Mall of America | Bloomington, MN
4,200,000 ft²
20,000 Parking Spaces
4 Levels, 520 Stores
Opened in 1992
4 Anchors

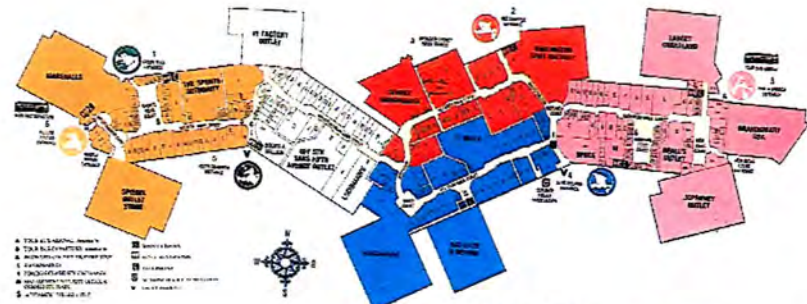
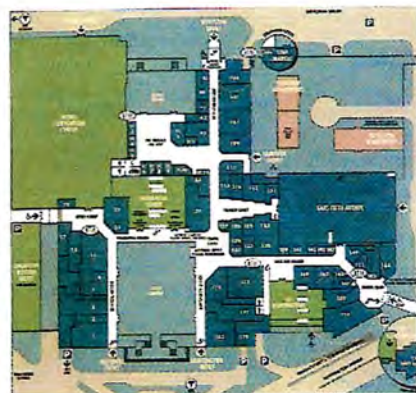


West Edmonton Mall | Edmonton, Alberta
5,400,000 ft²
22,000 Parking Spaces
2 Levels, 620 Stores
Opened in 1981
3 Anchors





Spheres of influence of the eight studied malls. Between each mall generation the influence has risen hundreds of miles



STREET LEVEL LOCATIONS 100-134



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The Mall Crisis

*"The time of the shopping mall's dominance over retail is at its end, and many believe that only the super-regional malls will be able to sustain themselves in the next 10 years. Some securities analysts are warning that as many as 600 of the nation's 2,000 regional malls may be closed or converted to other uses in the coming years"*¹

What happens to the malls that are vacant? If one were to suggest that 600 shopping malls will be vacant in the next several years, and the average regional mall is around 700,000 square feet plus another 1,000,000 square feet of parking, that is over 1 trillion square feet of wasted space that will be left to rot if something is not done with the vacant structures. A recent study by Price Waterhouse Cooper notes that of the 2,076 regional malls across the nation, 140 are currently closed and an additional 250 are headed for the grave. Only 10 malls have been constructed in the past 5 years, which compared to the construction amount during the 1970s, is almost nonexistent. Projections expect only 11 additional regional malls at most to be built in the next two years.² Last year, the shopping research consultant ShopperTrak, which monitors thousands of mall-based stores, found that customer traffic has fallen 3.3 percent and total sales 10 percent in the last year alone.³

Why is it that shopping malls are experiencing a major fallout in sales? Some say that Americans have grown tired and disenchanted with the mall experience. They are too big and repetitive, and you sometimes can't tell one from the next. Others say that malls are simply a victim, like all other shopping outlets, of a general retail malaise.⁴ However one may view the status of the shopping mall, the reasons can be linked to several major factors that have led to the building type's obsolescence in contemporary retail. As the way in which suburbia functioned changed, venues and shopping methods that its residents practiced also changed. A major aspect of the shopping mall experience was the ability to go to the center, shop for a while, stroll along the hallways, eat at the food court, and mill about, spending an hour or more in the structure in the hope that it would generate more profits for the tenants and the mall itself. Since this initial concept, the very idea of time and shopping has changed dramatically in the past 50 years.

New Retail Centers

Big Box | Power Center

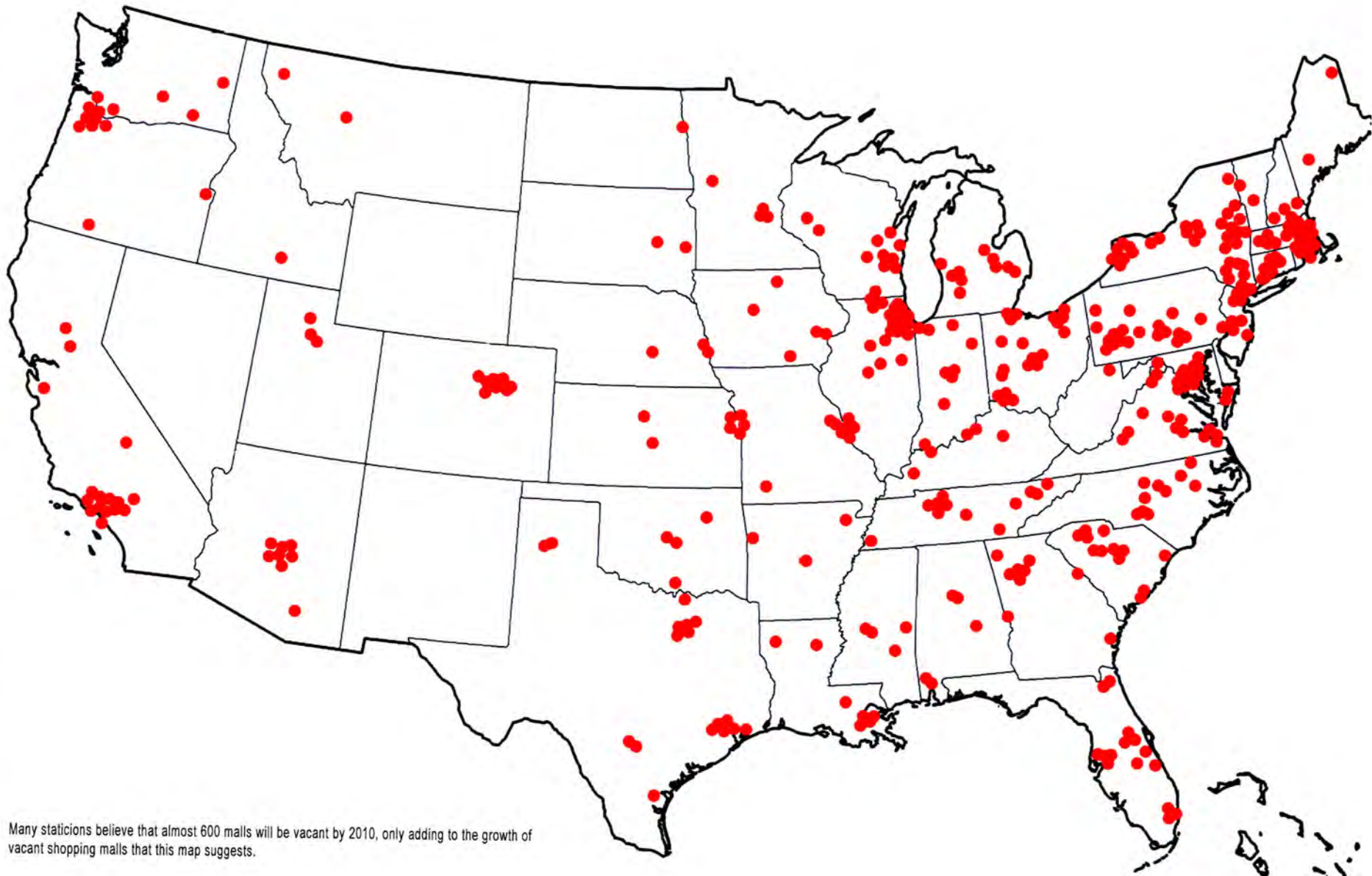
The Big Box Center is an accumulation of large scale retailers which are planned together, creating a center of simple, efficient shopping. The stores are usually organized together in two or more bands which define a central, shared parking zone. The term "big box" refers to a style of retail construction – typically a one story steel structure on a concrete slab, with its form similar to a simple box. Spend is encouraged in this center, whereas one can park their vehicle directly in front of each individual store instead of having to pass numerous stores in the mall type.

Lifestyle Center

Lifestyle Centers can be described as mixed-use commercial developments that combine the traditional retail functions of a shopping mall but with leisure amenities oriented towards upscale consumers. They are typically outdoors, with focus on pedestrian experience and recreation of the small-town business district. Lifestyle centers, which were first labelled as such by Memphis developers Poag & McEwen in the late 1980s and emerged as a retailing trend in the late 1990s, are sometimes labeled "boutique malls" and are often located in affluent suburban areas. The proliferation of lifestyle centers in the United States accelerated at the beginning of the 21st century, with the number of centers increasing from 30 in 2002 to 120 in 2004.

Outlet Center

Outlet Centers are commercially the opposite of the lifestyle center. Manufacturers sell their products directly to the public through their own branded stores. Other stores in outlet malls are operated by retailers selling returned goods and discontinued products, often at heavily reduced prices. Clothing, sporting goods, electrical products, cosmetics, and toys are among the types of items sold at outlet malls. Recent trends have the centers designed much like the lifestyle center type, stressing small scale building and making references to the small town ideal, complete with brick walkways and fake upper level housing. However, outlet centers remain retail focused, with only allusions to the small-town business district instead of trying to recreate it.



Many stations believe that almost 600 malls will be vacant by 2010, only adding to the growth of vacant shopping malls that this map suggests.

"It's the same old story: too many stores, outdated retailing concepts, obsolescent malls, changing consumer and demographic patterns, faltering suburban districts, and encroachment by new electronic formats. Many cavernous old malls are dinosaurs that can't compete with the convenience of drive-up value retails in power centers or strips."⁵

Speed | Environment

The concept of fast shopping has developed in the past 10 or 20 years. People are busier, they need their goods quicker, and they have less time to stroll around in the shopping mall. This trend has helped spur the development the newer shopping center types. As gender roles in suburbia changed, as did the client base for the shopping mall. Women took a much more active approach to employment towards the beginning of the 21st century, so the demographic of the female shopper switched. In the 1960s, the overwhelming majority of suburban females were housewives, in charge of maintaining the house and raising the family. The most popular recreational activity for the house wife was to visit the mall for extended amounts of time in a full shopping experience. Ruth Knack states it bluntly – "Working women simply don't have the time to spend hours in malls."⁶ Now that women have a much more active role in the work force, they have less time to meander about in the shopping mall, and the loss of profits demonstrates this trend. Thus, speed became a major issue, since planning methods of the shopping mall encourage drawn out circulation paths in the hope of retaining customers for as long as possible. Typically, a regional mall often requires a ten minute walk from one department store to the next. Mall goers have become fed up with the drawn out sequence to reach their preferred store and have abandoned the mall type for newer, faster models instead. There they can park their car directly in front of the store, walk in, buy their product, and leave, without any circulation gimmicks.

Another amenity of newer shopping centers which has trumped the shopping mall is the outdoor, open air environment. In the 1960s, mall developers sought to create the ideal climatic environment for shoppers through a constantly controlled temperature in an completely indoor space. Over the years there has been a general rebuke of this planning concept, for that many of the indoor mall spaces lack generous amounts of natural light and are filled with stale, recycled air. Heating, cooling, and maintenance costs of the mall usually raised the prices for tenants, which became a point of departure for store owners – many tenants moved out to open air centers to avoid paying for communal amenities in the shopping mall.⁷ One example of the trend is in San Antonio, where Joseph's men store, a 35 year tenant of the North Star Mall, recently moved across the street to an open air plaza, citing its reasoning mainly because of the overhead in the mall's high rent.⁸ Larger fashion chains are also pulling out of malls in favor of open air centers. "Several fashion chains have already bought into the concept. They are pulling out of malls and moving into lifestyle centers on the ring roads around the malls."⁹ The issue of environment is one clear indicator of the shopping mall's obsolescence in changing retail trends – what was once a positive asset to a shopper's experience is becoming a reasoning for avoiding the mall all together. The International Council of Shopping Centers recently released a study which claimed that almost two thirds of shoppers interviewed preferred open-air shopping centers over hermetically sealed shopping malls. Such a statistic is representative of a very significant trend which many believe cannot be countered by any updates or renovations that shopping malls may make.

"By 2010, 55 % of the nation's shopping is predicted to be conducted in a non-store venues – online services, direct mail, catalogues, 800 numbers, and the like" Labich, Kenneth. "What Will it Take to Keep People Hanging Out at the Mall?"¹⁰

The most recent, but most significant factor that has affected the mall is the rise of internet retail. It struck a blow on the mall industry that retailers have yet to fully experience. Since the turn of the century, internet sales have increased by over 200 percent each year. After the initial boom of internet retail went through its growing pains, where profits slipped and online markets barely broke even, internet shopping rose continually in the past five or so years. While only 43 percent of online retailers recorded profits in 2000, the number rose to 56 percent within a year. By 2002, online sales rose 48 percent to 76 billion, and by 2003 the number nearly passed the 100 billion mark.¹¹ By today day total online sales hover around 180 billion, and according to a 2004 report by Forrester Research, by 2010, sales are projected to account for 12 percent of all retail sales, possibly reaching 316 billion in revenue. As of now it is unclear as to how large online retail will grow, what its limitations are in total retail, or if there even are any limitations at all. Regardless, this much is clear – internet shopping has and will continue to severely affect the amount of traffic shopping malls attract. The steady, consistent growth of online retail has many worried – "The growth of 'e-tail' has both mall developers, shopkeepers, and the local governments that depend on their sales taxes, running scared."¹² Clearly, the phenomena of online shopping has quickly moved from temporal to permanence very quickly, and is a reality that shopping malls must face.

Internet

It has been recognized that most developers do not expect continual retail success in a mall for any more than twenty years. Since malls sought to attract younger, chic shoppers, its language and aesthetics were very time specific, and as such required renovations to update a mall's style to the new trend of color and design. The Midland Mall in Rhode Island experienced a major renovation as early as 1982, barely 15 years after it was opened. Extensive interior updates and a new name was a method of attempting to resurge its profit margin after the mall experienced a continual decline in sales. Many critics believe that while the shopping mall phenomena was at its height and renovations to malls may have brought some success, new retail trends demand a major shift in how malls function if there is any chance for them to remain as a retail place of choice. "To be clear – a selective, targeted replacement of a few weak tenants, a couple highly superficial cosmetic enhancements and a scattering of fresh new signage – this is not what is being advocated here."¹³ New retail trends are forcing mall developers to completely rethink the values and planning methods that have defined the shopping mall type for the past fifty years. Renovations are no longer sufficient to ensure continual profit. "There is no such thing as 'tweaking the model' when it comes to the future prosperity of the mall" says LaSalle. "If the mall is to effectively re-secure its position as the preferred shopping center format for customers, redevelopments must proactively anticipate what the next 15-20 years will bring in the form of consumer demand."¹⁴ In order to ensure any hope of keeping the mall at the forefront of retail venues, the way in which the consumer interacts in its spaces must be readdressed. Indeed it can be seen that for the first time in decades, shopping centers are poised for the biggest revolution since their first beginnings almost fifty years ago.¹⁵

Renovation | Reprogramming

In order to stay competitive with newer commercial program types and recognizing a need for new ideas in how malls function and what types of programs they house, some malls are attempting to bring in previously foreign tenant types into their spaces in the hopes of achieving a new revitalization. "Schools, libraries, museums, churches, and police stations are cropping up as shopping mall tenants nationwide."¹⁶ This trend has happened partly due to the overwhelming amount of space in declining malls – unusual tenants move in due to lower rent costs because of low profits. Some believe that new programs can be added vertically into malls, resembling residential space that existed above first floor commercial spaces in downtown commercial districts.¹⁷ The amount of retail space abandoned by mall tenants is overwhelmingly disproportionate to the amount of space that other programs are filling. Nonetheless, a group of developers are stressing that malls must add residential and office space to their retail centers to establish a multi faceted program complex. The trend has its odds stacked up against it, since shopping malls were never designed to house residential units and the push for mixed-use development has already been absorbed by the lifestyle center type.

The Anchor

The continual decline of the department store has also had a significant impact on mall success, considering its role as a definitive staple in profits. In the past 10 years, mall based department store profit has fallen from 6 percent to a hovering negative 3 percent. Many surviving anchor department stores are following a trend in which they move into an independent plaza, completely removed from any mall relation. According to a Wall Street Journal report, typical anchor department stores such as Sears, J.C. Penny, and May Department Stores have all begun to open stand-alone outposts in the past several years, a trend suggestive of the next couple years.¹⁸ This move has already begun to spell disaster to mall owners – their dependence on anchor stores to provide a customer base has left the mall's success in the hands of the anchor's success. Typically when a mall loses at least half of its anchor tenants there is a two in three chance that the entire mall will become abandoned within several years.

Anchor failure is nothing new in shopping mall developments. While mall owners anticipate closings of stores, there have been few widely recognized solutions to anchor closings. At one point, in the early 1990s, mall developers sought to entice cinema multiplexes to replace vacated anchors, but it never happened due to a slumping movie industry.¹⁹ Some developers are shifting the focus of the anchor space from the department store to other solutions. "Malls across the country have begun looking at restaurants, cinemas, big box stores, and even supermarkets as main attractions. In some places they are even replacing the traditional mall anchor, the department store."²⁰ Once considered a stable "anchor" in consumer draw and profit, the success of the department store as mall anchor has become very shaky due to new retail trends.

The Parking Lot and Urban Connections

The parking lot in the shopping mall complex is always present, and its size is proportional to the total square footage of the mall. All space is cleared out for the placement of the parking spaces, in which the mall is sited in its center. It becomes an odd sort of temenos for the shopping center based on 20th century vehicular infrastructure. The spatial barrier that the parking lot creates provides a disconnection between the circulation that occurs in the mall and the circulation that occurs in its context. From a profit standpoint, some believe that one of the reasons that the mall has lost touch with its customers stems from the its physical isolation and lack of connection to its community.²¹ Margaret Crawford furthers this urban issue in stating that "While Parisian arcades reinforced existing street patterns, malls – pedestrian islands in an asphalt sea – further ruptured an already fragmented urban landscape."²² This is a serious planning flaw, detrimental to both architecture and retail alike. Not only did malls have no challenges of existing fabric, like Paris, but their planning methods of parking lot placement were detrimental in every aspect.

Scale

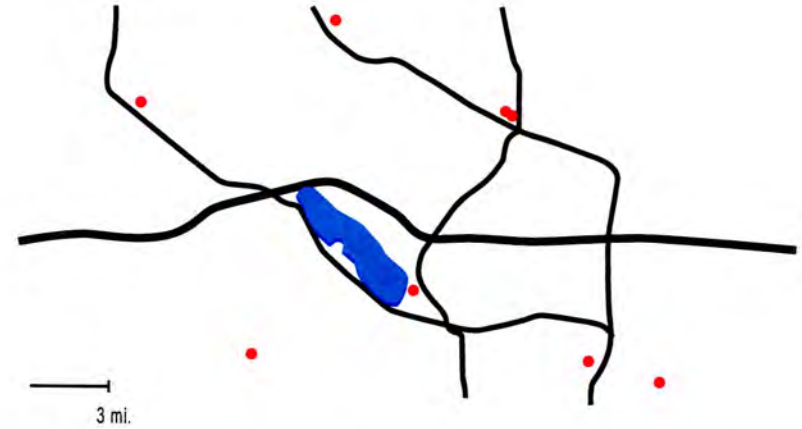
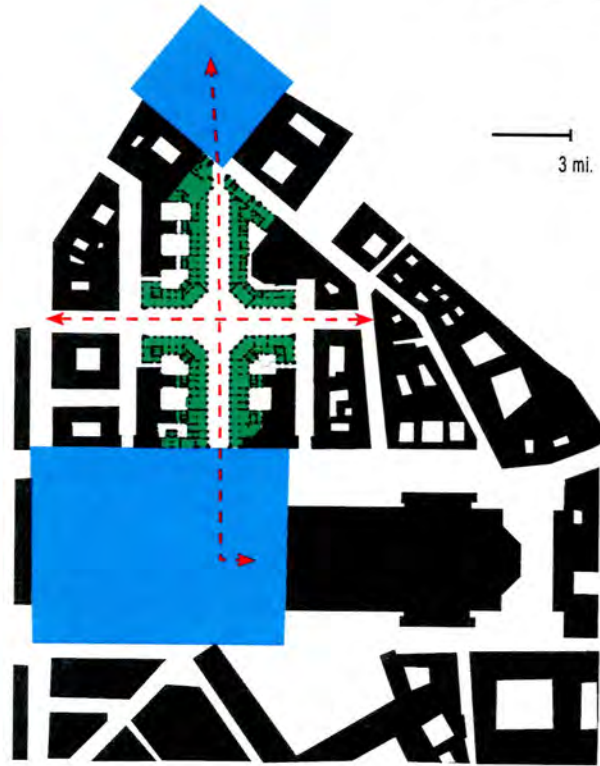
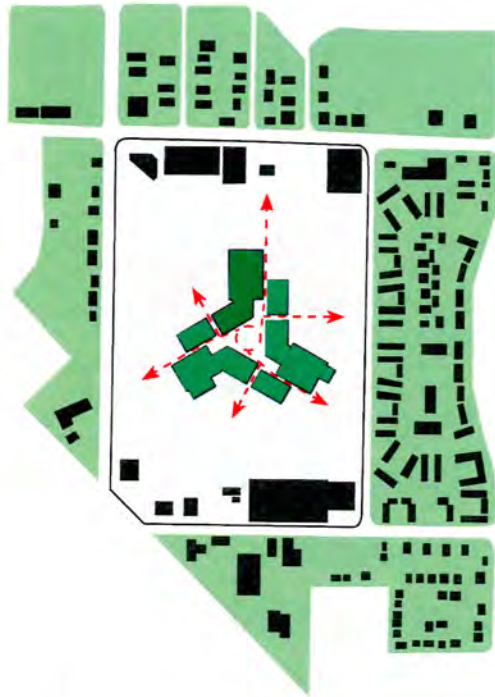
Many criticisms of the shopping mall type by its consumers surround the issue of spatial and building scale. Surely in visiting a megamall, one becomes lost in the sheer size of space that the mall both encompasses and houses. It is the wonder of the scale which becomes an attractive draw for its visitors, but at the same time overbearing scale can be very intimidating to the shopper. In particular, the scale of parking lots creates a very unwelcome environment. When the lots have very high vacancy, one feels lost in its space, for that human traits prefer against wide open spaces. The uncomfortableness can be linked to primal avoidances of remaining in open space in the possibility of becoming prey. The scale of the mall itself can also be detrimental to a shopper's overall experience. Countless numbers of stores and overwhelming views of mall spaces can intimidate the individual, feeling that it would be impossible to visit in the entire building in a day or even more. A response to these issues of scale are being addressed in the new lifestyle centers, which stress smaller scale development usually not exceeding two stories and carefully controlling the scale of its spaces.

Often in mall development planning, rival developers choose to open a shopping mall in close vicinity to existing malls to absorb the existing consumer base. Because of this tactic some areas have become so over-malled that none of the malls profit very well due to overaggressive ad campaigns and constant attempts to provide better deals through such low prices that profit actual drops for each mall. Typical of many suburban developments, the greater Syracuse Area in New York is a perfect example of Mall Wars. From the 1960s onward, no less than 8 malls have been built in a ten mile radius –

Mall Wars

Tri-County Mall, constructed 1969, Awaiting Demolition | Redevelopment
 Camillus Mall, constructed 1966, Demolished 2000
 Fayetteville Mall, constructed 1974, Demolished 2003
 Penn – Can Mall, constructed 1975, Demolished 2002

Shoppingtown Mall, constructed 1975, Experiencing 25% vacancy
 Marketplace Mall, constructed 1984, Demolished 2002
 Great Northern Mall, constructed 1988, Experiencing 25 % vacancy
 Carousel Mall, constructed 1990, Awaiting Expansion Proposal



Relation of highway, mall, and mall in the greater Syracuse area.

Two shopping types, two urban results - the North Randhurst shopping center sits in a zone of parking space, effectively shutting it off from any other pedestrian or vehicular sequences that exist around it. Opposite is the Galleria Vittorio Emanuele II, in Milan, which strengthens the connectivity of existing urban conditions.

As of today, the only surviving malls are Shoppingtown, Great Northern, and Carousel. When Carousel opened in the early 1990s it effectively absorbed the entire consumer base of the smaller, first generation regional malls. Even within the three surviving malls, as is representative of the national trend, both have experienced beginning drops in profits. Shoppingtown has almost thirty vacant openings of one hundred and ten total tenants, including one two floor anchor space. Great Northern as well has nearly twenty-five vacancies and is in need of a department store to fill in its largest anchor space. The vacancies have slowly risen since the early 1990s when Carousel first opened. Here one can see the ramifications of mall wars and the effect on the small and large scale success of the shopping mall.

Yet another trend that has encompassed many vacant shopping malls is "de-malling" – the complete or partial destruction of mall fabric in a total redevelopment of the site in favor of lifestyle or big box centers. Such is the case in many declining mall sites – sections or complete malls are torn down to be replaced with shopping centers that are more applicable to contemporary shopping trends. In Fayetteville, NY, the Fayetteville mall was completely torn down and replaced by a big box center with little to no visual presence of the mall that once stood. Similarly, the Penn-Can Mall in Cicero, NY, experienced a very similar situation in which all but the anchor stores were destroyed, and the anchors became warehouses from a giant automobile dealership complex. "Those that own malls are 'de-malling'; which is a jargony way to describe tearing everything down except for anchor stores at either end and then rebuilding from the middle out."²³ Given the once iconic status of shopping malls, this trend threatens to erase this icon from suburban landscape and memory.

De-Malling

3 Malls | 3 Failures

Case Studies

In order to fully understand urban relationships and weaknesses that the shopping mall type possesses, a series of case studies investigating urban density, infrastructure, zoning, hierarchy, organization, highway proximity, and the like would shed light on the most important urban and spatial issues that have both led to the demise of the mall and also plague vacant sites today. Three randomly selected projects have been chosen:

Tri-County Mall | Baldwinsville, NY
Midtown Plaza | Rochester, NY
Rhode Island Mall | Warwick, RI



Tri-County Mall | Every Town Needs a Mall

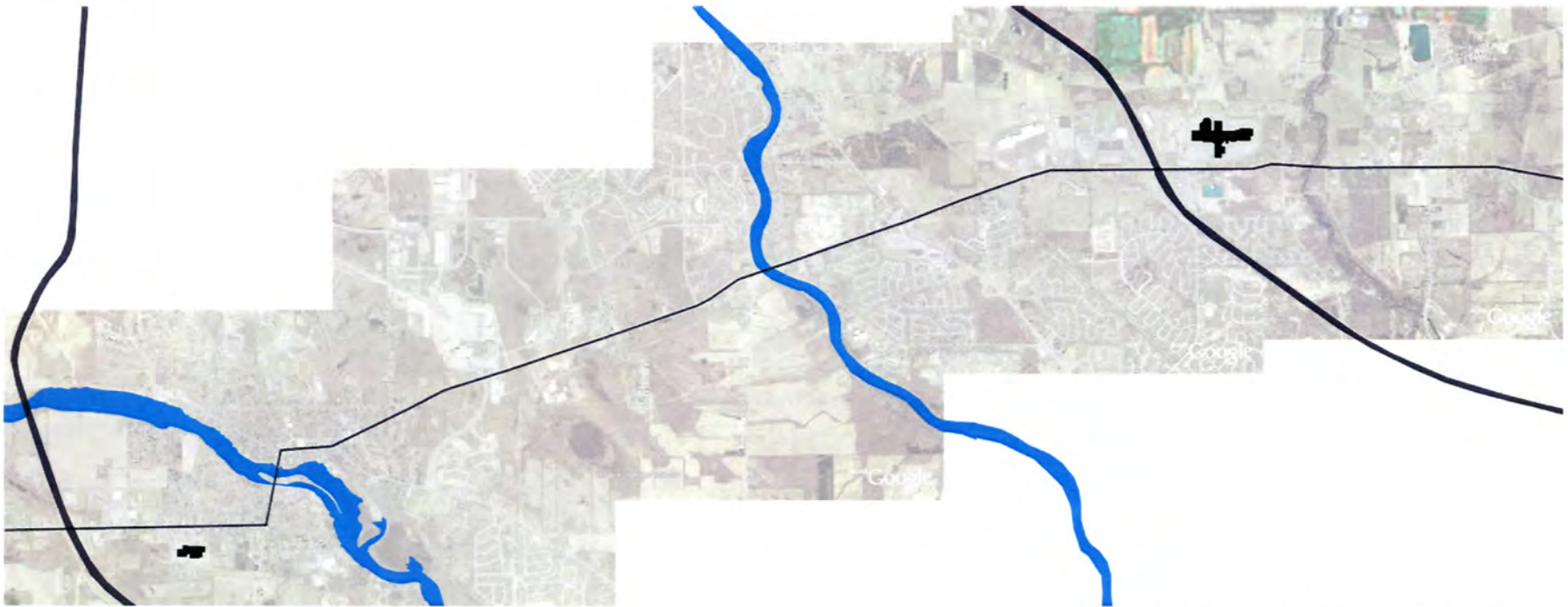
The Tri-County Mall was constructed around 1965 amidst the shopping mall boom that swept the nation. The attempt to create a shopping mall in Baldwinsville, NY, had its issues from the start. The site is in a very spatially sprawled suburb, lacking an ideal suburban density for the success of the mall. The complex never contained a clear anchor store, and this resulted in low customer pull. In the early 1990s, one of the largest stores, an Eckerd's pharmacy, opted to move out of the mall and building a new freestanding store right in front of its previous location. That move signaled a major blow to the overall profits of the mall – within the next couple of years its vacancy slowly but continuously sank.

The mall does have close proximity to a nearby highway, route 690, which leads into the city of Syracuse. It is however very disconnected from the center of the town and does not have proximity to any other commercial or civic zones. Tri-County was a victim of Mall Wars, as were many shopping malls around the 1980s. The Great Northern mall was constructed less than 5 miles away from the anchorless complex, boasting almost one million square feet in retail. Any consumer pull that the Tri-County mall had managed to muster was quickly absorbed by the new development. As of now, the mall has little to no program left in its walls. There is a discount grocery store and a dollar store, along with a catering service and the original cinema. The main circulation hall has been blocked off, effectively determining the mall to be dead. As of the past months, there has been interest in purchasing the property in which it would be de-malled and built up as a lifestyle center, although no final decision has been made.



Baldwinsville, NY, 2004





Tri-County Mall and the newer Great Northern Mall sit only 5 miles apart.



Midtown Plaza | Urban Mall

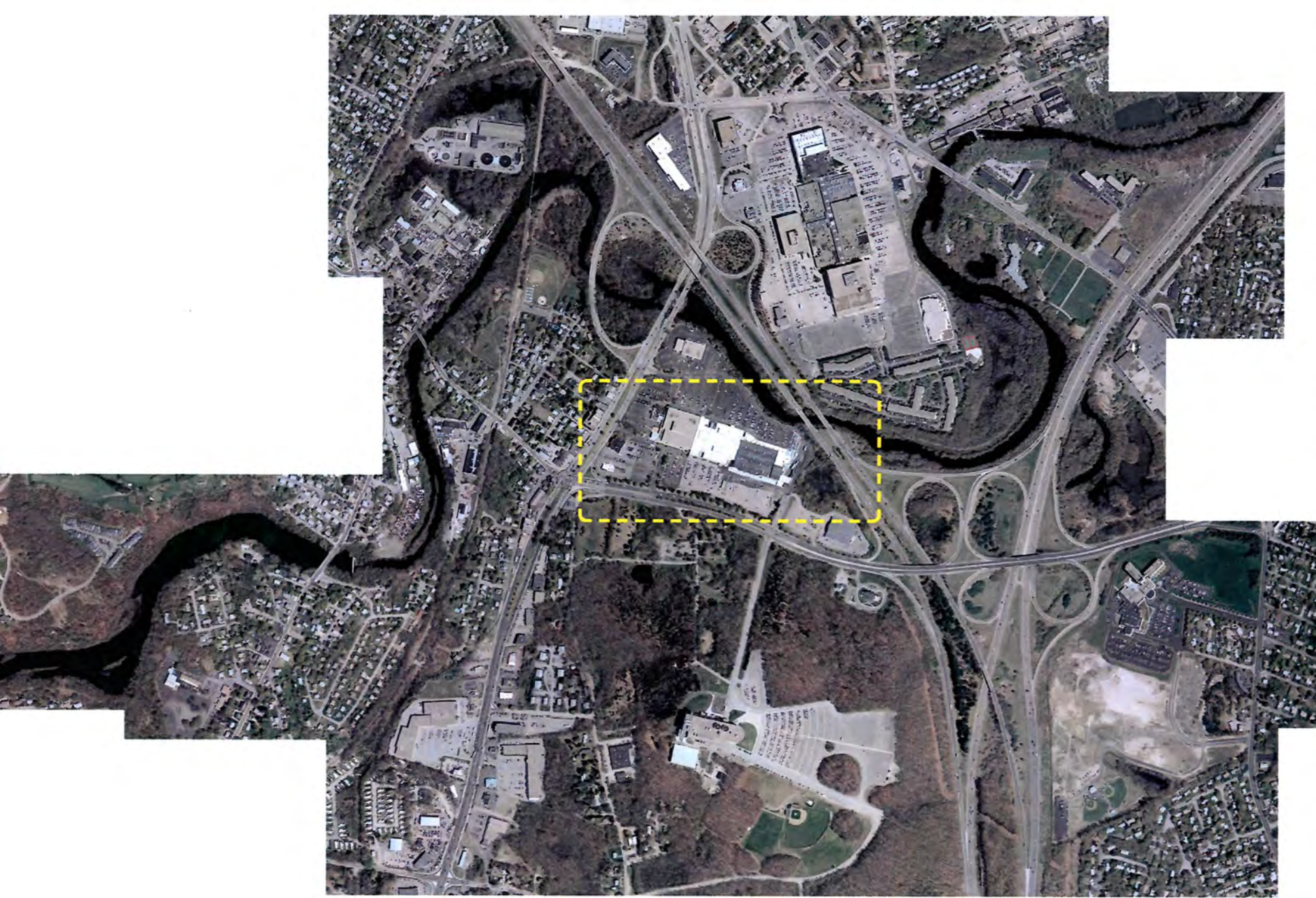
Midtown Plaza in Rochester, New York, is one of the best-preserved first generation shopping malls that exists in the country. Touted as being one of the nation's first enclosed shopping mall types of the 1960s, it is a very good example of mall planning sited in an urban context which leads to interesting issues. The emergence of the project sought to counter suburban plaza developments that were growing at an incredibly fast rate. So owners of McCurdy's and Forman's Department stores collaborated to produce a shopping center in the heart of the city. They contracted Gruen for the mall's design and planning, considering his prominence in the shopping mall development community. Gruen used the typical European square in designing the central space of the mall. It is two stories, completely enclosed, which was still rather radical in the evolution of the shopping mall in the very early 1960s. It houses a three level, 2000 car parking garage under the main level. Overall the building is around 500,000 gross square feet. The key icon of the shopping center is the "Clock of Nations", designed by Gruen's office during the mall's construction. The clock, which represents 12 nations, has 12 cylinders each with a scene with puppets for each nation. Each half hour the cylinders with the nations would open, and they would all rotate.

The siting of the mall is an ideal situation, literally placed in the center of the city in a plan reminiscent of the European town square. It is placed along the end of I490, which was the major highway thoroughfare leading into the city. However, even this placement was not enough to secure a continual consumer base, for sales started to slip as early as 1970. It does make an attempt to be part of a pedestrian circulation network in the city, just as Parisian arcades did, however it has been reduced to receiving a small lunch time crowd. The mall closes at 5 o'clock and is closed during the weekend, demonstrative of its lack of consumer draw. Some believe that placing shopping mall in an urban environment had alienated many suburban shoppers, whose decision to move to suburbia in the first place was to avoid the city altogether.





Typical of many 1960s urban renewal projects, the Midtown plaza eliminated a large piece of residential housing in downtown Rochester.

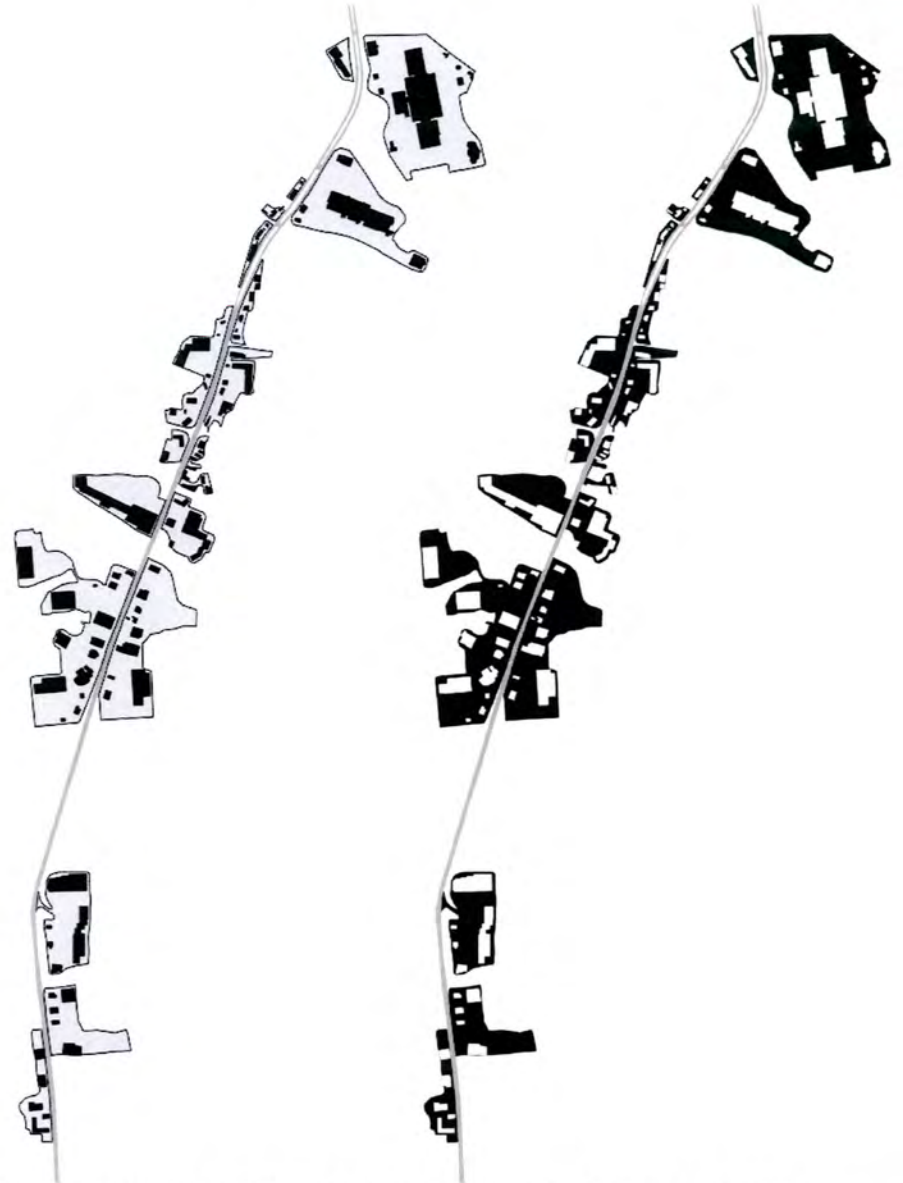


Rhode Island Mall | Mall Wars

Built in 1968 as the "Midland Mall," this was the first suburban enclosed shopping mall in Rhode Island, and the first multiple level shopping mall in New England. The placement of this mall on Route 2 was a catalyst for commercial development along the road that continues to see additional development to this day. The planning of the mall is prototypical of first generation shopping malls – it is a two level dumbbell style plan. It was built with a Sears store anchoring the mall's west end, and along the east end G. Fox, based in Hartford which anchored the opposite end almost since its opening. Though the adjacent Warwick Mall opened in 1972, boasting one million square feet of retail space, the two malls managed to coexist; however the larger mall had a significant advantage over its earlier neighbor. In the early 1980s, the mall went through an extensive renovation and rebranding, renamed the Rhode Island Mall, in an effort to re-boost sales and stay competitive with other area malls. The beginning of the end occurred when G. Fox was bought out by Filenes and its anchor store was converted into a Filene's department store. The problem was that the adjacent Warwick Mall already had a much larger Filene's, and the converted anchor at the Rhode Island Mall closed within a year. Mall owners struggled to find a replacement for the vacated anchor store, and profits slipped continuously. In 2000, it was announced that the G. Fox | Filenes anchor and another third of the mall would be destroyed and replaced with a Wal-Mart. A major blow to the mall is that the Wal-Mart owners decided to not have the store open into the mall, rendering it essentially independent from the rest of the complex. In 2002 Kohl's built on the second level above the Wal-Mart and followed suit, operating independently and figuratively turning its back on the rest of the mall. After these two critical moves whatever mall tenants that remained quickly moved out, leaving the building with over 90 percent vacancy.

In Warwick the intersection of I295 and I95 receives an incredible amount of traffic, ideally an area where one would want to place a shopping mall. There are off ramps that end right across from the entrance to the mall complex, a situation in which the mall couldn't be any more accessible by vehicle. Pair the two major highways with a major street route and site of the mall receives a volume of traffic that eclipses traffic volume of nearby areas by far. While the mall was in fact able to survive having the Warwick Mall next door, one could only imagine that it would not experience the decline it had if it were the only shopping type in its area. Indeed, the reasoning for closing the G. Fox | Filenes anchor was because of the existing Filenes across the street. If the Rhode Island Mall had existed apart from the Warwick Mall it might still have close to full occupancy today.





Commerical development and parking lots space along Route 2, which was initiated by the Rhode Island Mall's construction.

1235

Plan B

As developers search for the most cost effective solution to breathe new life into defunct shopping malls, the method of de-malling is detrimental to the concept of collective memory in the suburban city. Given the mall's cultural and social importance in the suburban town, to destroy the economic icon in which thousands of towns have associated their social and retail centers would severely damage and possibly erase the social memories that occurred in its spaces. Just as the modernists sought to clear away detrimental and vacated buildings, here developers choose to destroy failed malls with little to no thought about the importance to memory that the complexes preserve.

In Syracuse, the previously mentioned Penn-Can mall met its demise in the late 1990s, closing altogether by 2000. In 2002, developers decided to tear it down, effectively destroying the memories that its shoppers had of its stores, spaces, and presence. The nearby Fayetteville mall also met a similar demise. The mall complex became part of a Duany Platter Zyberk plan to initiate a new town center at the mall site, but instead of selectively redeveloping the area so that the remnants of the mall's presence still existed, the firm charged to tear it down and effectively erase it from its site. Now where the mall once stood is a big box center where previous fabric is completely erased, where shoppers have no visual recollection of what once stood.

De-Malling Crisis

To translate collective memory to the shopping mall crisis, one must place the relation of the shopping mall's history in an overall timeline. The first generation that really grew up with the shopping mall is the Baby Boomers, which were children around the beginnings of the shopping mall boom in the 1960s. The successive generation, Generation Y, experienced its childhood around the cusp of the mall's decline. Future generations may or may not even be able to experience the shopping mall type first hand and may have to rely on stories and memories of earlier generations, which would in turn establish a collective memory of the shopping mall. Just as collective memory in the city is defined by the spaces that it possesses and the transformation of its fabric through time, indeed too the shopping mall's transformations will shape the quality and clarity of the collective memory that it generated. We as designers must recognize the social importance of the mall and acknowledge it as a cultural and economic icon that has become an artifact in its program's obsolescence. Therefore in redeveloping a declining or abandoned mall, it is critical that the designer use this lens to preserve critical fragments and systems that have significant value to the collective memory of its city.

The First Suburban Artifact

A Universal Solution

To find a programmatic and architectural solution to the malls that have lost their tenants, one must weigh the significant parts of their forms and utilize them in a redevelopment. As was noted earlier, simply placing residential or office space in an existing mall will rarely spur a complete rejuvenation of the mall type itself – therefore a much more radical programmatic solution is necessary to reactive the sites in which these ghosts malls sit. Given the variation in both mall size and location, there are a number of issues that are very important that must be considered in **achieving a universal programmatic solution to the shopping mall.**

Climate – The solution preferably should be adaptable to fit a wide variety of climates throughout the year, and climate/season changes should not have an effect on the performance of the program to be introduced.

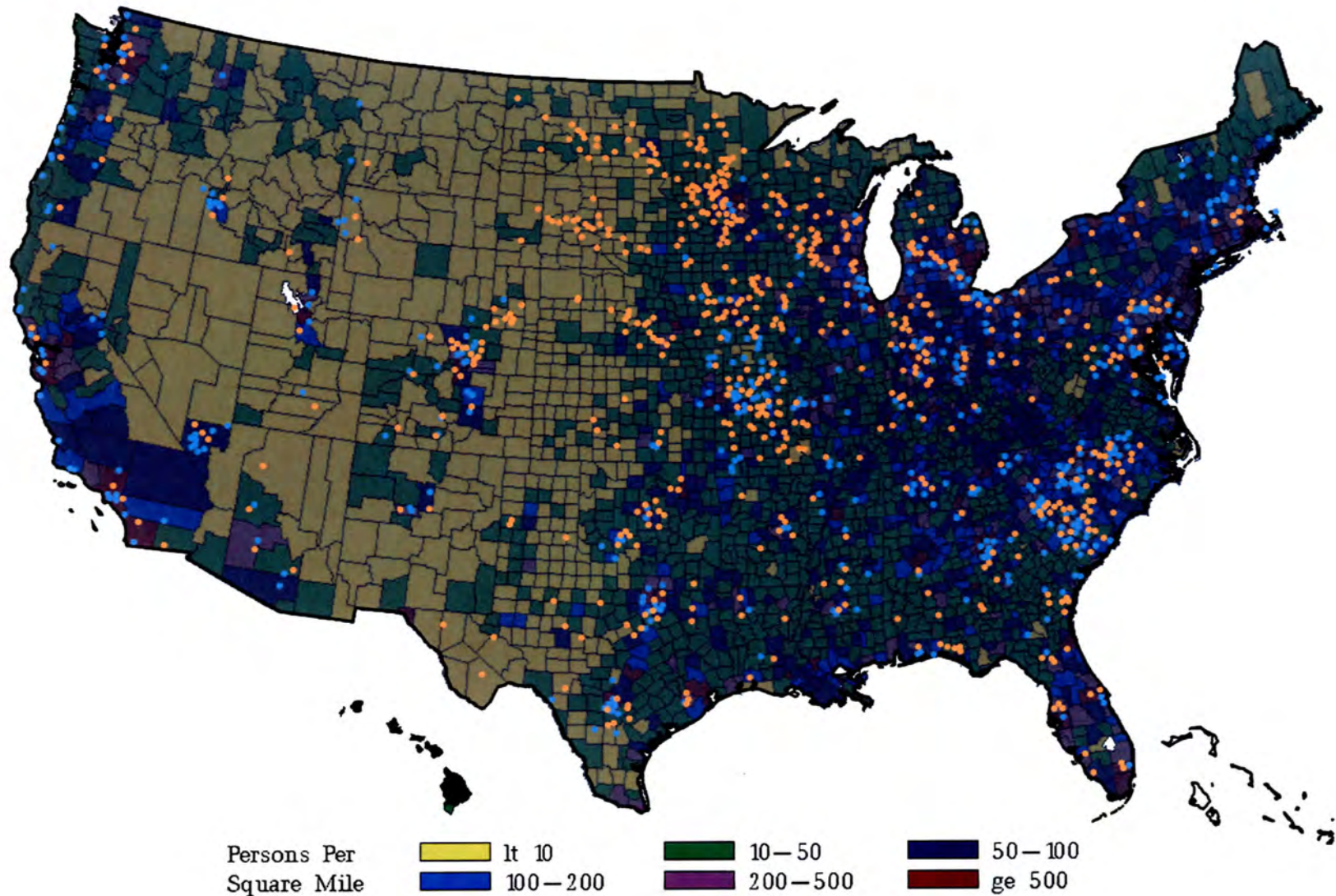
Size – As understood earlier, shopping malls can exists anywhere from 300,000 to several million square feet, which is an incredibly large difference. Therefore the program solution must be able to shrink or expand depending on the size of the site in which it is to be placed

Urban Relationships – To solve one of the largest urban issues, parking lot space, the new program must be able to use the space of the parking lot in an efficient solution, thus eliminating the spatial barrier between pedestrian circulation and urban circulation.

Environmental Responsibility – Ideally the new program should be beneficial to the environment, using green building techniques and embracing sustainable site conditions.

The Fuel Crisis

In the past 10 years, the world's supply of petroleum oil has reached its peak, and many scientists believe that the natural supply of oil will be depleted quite possibly in our lifetime. For many the dependence on oil for industrial production and fuel for transportation is immeasurable. Countries run on oil, and the thought of oil reserves being pumped dry have many scared of the ramifications that will occur when the oil supply is no more. Several groups of scientists in the past several years have focused their research on creating alternative fuels to curtail the world's dependence on natural oil and limit new fuels with little to no emissions in the hope of cleaning the air. Several different alternative fuels are being researched, including electricity, ethanol, biodiesel, hydrogen, methanol, natural gas, and propane. All are relatively new fuels and are constantly being refined and researched to create efficient, cleaner burning fuel.



Relation of population density to biofuel pump density has become disproportionate - in agricultural regions there are more fuel pumps than can be found in metropolitan areas.

Biodiesel

Biodiesel is a cleaner burning diesel replacement fuel made from natural, renewable sources such as new and used vegetable oils and animal fats. Just like petroleum diesel, biodiesel operates in compression-ignition engines. Blends of up to 20% biodiesel (mixed with petroleum diesel fuels) can be used in nearly all diesel equipment and are compatible with most storage and distribution equipment. Higher blends, even pure biodiesel (100% biodiesel, or B100), may be able to be used in some engines with little or no modification. Using biodiesel in a conventional diesel engine substantially reduces emissions of unburned hydrocarbons, carbon monoxide, sulfates, polycyclic aromatic hydrocarbons, nitrated polycyclic aromatic hydrocarbons, and particulate matter. These reductions increase as the amount of biodiesel blended into diesel fuel increases. The best emission reductions are seen with B100.

Storage feedstock is passed through a heat exchanger in preparation of mixing with catalyst

Catalyst is dissolved in the alcohol using a standard agitator or mixer.

The alcohol/catalyst mix is then charged into a closed reaction vessel and the biolipid (vegetable or animal oil or fat) is added. Recommended reaction time varies from 1 to 8 hours. Excess alcohol is normally used to ensure total conversion of the fat or oil to its esters.

The glycerin phase is much more dense than biodiesel phase and the two can be gravity separated with glycerin simply drawn off the bottom of the settling vessel. In some cases, a centrifuge is used to separate the two materials faster.

The excess alcohol in each phase is removed with a flash evaporation process or by distillation. The alcohol is recovered using distillation equipment and is re-used.

The glycerin by-product contains unused catalyst and soaps that are neutralized with an acid and sent to storage as crude glycerin

Once separated from the glycerin, the biodiesel is sometimes purified by washing gently with warm water to remove residual catalyst or soaps, dried, and sent to storage.

Ethanol

Ethanol is a clean-burning, high-octane fuel that is produced from renewable sources. At its most basic, ethanol is grain alcohol, produced from crops such as corn. Pure, 100% ethanol is not generally used as a motor fuel; instead, a percentage of ethanol is combined with unleaded gasoline. This is beneficial because the ethanol decreases the fuel's cost, increases the fuel's octane rating, and decreases gasoline's harmful emissions. Any amount of ethanol can be combined with gasoline, but the most common blends are:

E10 - 10% ethanol and 90% unleaded gasoline

E10 is approved for use in any model of vehicle sold in the U.S. Automakers recommend its use due to its high performance, clean-burning characteristics.

E85 - 85% ethanol and 15% unleaded gasoline

E85 is an alternative fuel for use in flexible fuel vehicles (FFVs). There are currently more than 4 million FFVs on America's roads today. In conjunction with more flexible fuel vehicles, more E85 pumps are being installed across the country.

Milling. The feedstock passes through a hammer mill which grinds it into a fine powder called meal.

Liquefaction. The meal is mixed with water and alpha-amylase, then passed through cookers where the starch is liquefied.

Saccharification. The mash from the cookers is cooled and the secondary enzyme is added to convert the liquefied starch to fermentable sugars.

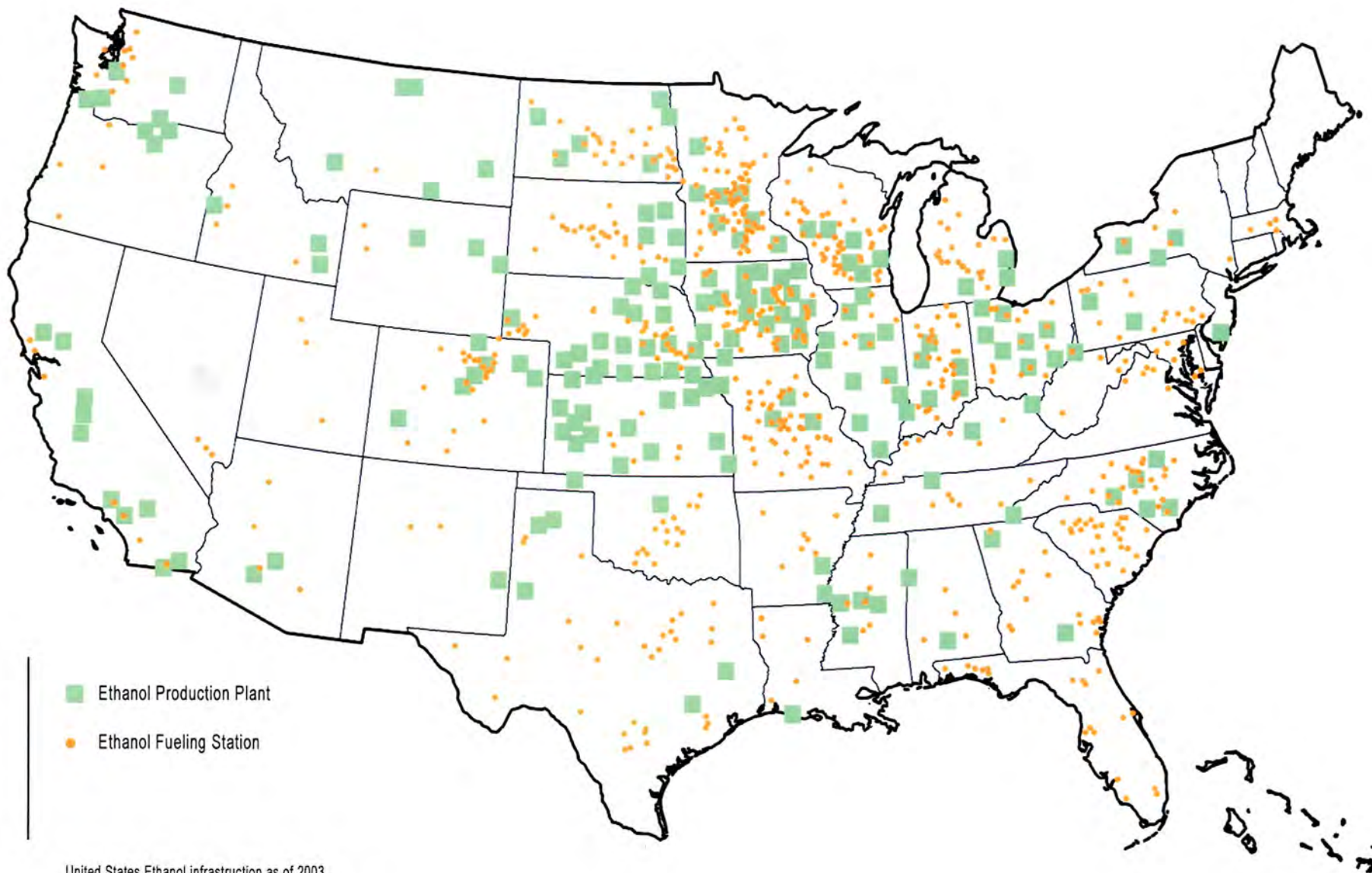
Fermentation. Yeast is added to the mash to ferment the sugars to ethanol and carbon dioxide. Using a continuous process, the fermenting mash is allowed to flow through several fermenters until it is fully fermented.

Distillation. The fermented mash, contains about 10% alcohol plus all the non-fermentable solids from the corn and yeast cells. The mash is pumped to the continuous flow, multi-column distillation system where the alcohol is removed from the solids and the water.

Dehydration. The alcohol from the top of the column passes through a dehydration system where the remaining water will be removed. The alcohol product at this stage is called anhydrous ethanol and is approximately 200 proof.

Denaturing. Ethanol that will be used for fuel must be denatured, or made unfit for human consumption, with a small amount of gasoline (2-5%).

Co-Products. There are two main co-products created in the production of ethanol: distillers grain and carbon dioxide. Distillers grain, used wet or dry, is a highly nutritious livestock feed.



United States Ethanol infrastructure as of 2003.



Major ground transportation terminals, which could benefit greatly from a higher amount of biofuel stations in closer proximity.



The potential exists to convert vacant malls into biofuel centers, creating a biofuel presence in metropolitan areas that is much needed.

The facilities needed for alternative fuel production require an open floor plan for production components, storage facilities for raw material preparation, storage for fuel byproducts, and land for harvesting of raw material. The shopping mall offers a distinct advantage in the placement of an alternative fuel program. The size and open plan of anchor stores are ideal candidates for production facilities, and other program facets can be easily placed in specialty store places. Parking lots can be utilized to produce a partial amount of the raw materials in the production process. Ideally, the traffic infrastructure in which malls are linked to provide an excellent opportunity for the program to not only produce and research the fuels, but also become a fueling station for both commercial and pedestrian vehicles. If one were to add a public aspect to the biofuel center, it would create a doubling of presence on the old mall's site. Adding an educational piece to the biofuel program will not only expose the public to the benefits and research of biofuels, but it would also create a true public presence that the shopping mall always strived for but never successfully achieved.

A New Biofuel Center

To help transform the shopping mall into a suburban artifact, two things must happen to ensure success. First, the program must change from its commercial past, and second, there must be a fragmentation of the original mall fabric. Selectively reducing pieces of the mall's structure will not only transform its form into an artifact, but it will also maintain the collective memory that its original program produced. Thus, part of the mall will be maintained and slightly altered to fit the new biofuel center program, while introducing new circulation systems and architectural layers. The other part will consist of reprogramming the mall's fabric into a public park through careful fragmentation of its architecture to create a composition which invites the viewer to both remember what once existed, and visually reconstruct the remaining fragments. In its essence, the park will strive to not only preserve significant pieces of the architecture of the mall and the memories that coincide, but also introduce a new program in hopes of reactivating the site.

The selection of a site is essentially insignificant, in that any abandoned shopping mall is an excellent candidate. For the purposes of this project, the previously discussed Rhode Island Mall in Warwick, Rhode Island will become the site for a new biofuel center and public park, partially for its location in the center of the state and its memory value as the first shopping mall the state had at the time of its construction.

A Universal Site

Between the Sears, Wal-Mart, and Kohl's anchor stores there exists almost 350,000 square feet available exclusively for biodiesel and ethanol production. Each anchor space can be devoted to a respective fuel, using the lower level as storage facilities of raw materials and produced fuel with the upper level as the production plant. While Wal-Mart and Kohl's each have enough profit to secure their presence for the next several years, this project approaches the site in the thought that in due time the anchors will also become victims to ever-changing retail trends and vacate the site.

Fuel Center Need

In the United States, there are approximately 960 ethanol stations and 600 biodiesel stations. There is an uneven disbursement of fueling stations in the United States, with some areas having little to no stations hundreds of miles, and high densifications towards the middle of the country. Many agricultural zones use and produce biodiesel and ethanol in their farm equipment, thus the densification of fueling stations is highest in these areas. In Rhode Island, there are no registered biodiesel or ethanol fueling stations.

Fuel Production Capacity

Existing biofuel plants have calculated that each square foot of production plant space produces 35 gallons of fuel per year. In placing a biodiesel and ethanol plant in each anchor space (150,000 ft² total), annual fuel production could possibly reach up to 5.25 million gallons of fuel per year.

Program List

Biofuel Center

Biofuel Production Plant – Biodiesel and Ethanol plant – 350,000 ft²

Raw Material storage – 200,000 ft²

Production Facility – 150,000 ft²

Office Space – 10,000 ft²

Filling Station

Space for commercial trucks – 2,000 ft²

Space for passenger vehicles – 1,000 ft²

Research Center

Laboratories – 5,000 ft²

Educational Center

Classrooms – 1,000 ft²

Laboratories – 1,000 ft²

Raw Material crops

Land Space – 140 acres (approx 2,200,000 ft²)

Commercial zone

Restaurants – 50,000 ft²

Automobile maintenance – 20,000 ft²

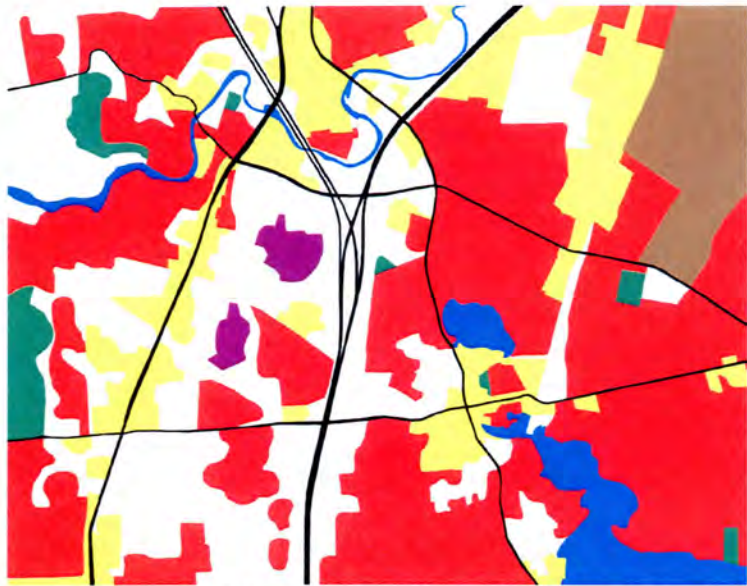
Market | Convenience store – 5,000 ft²

Public Park – 38 acres (approx 550,000 ft²)

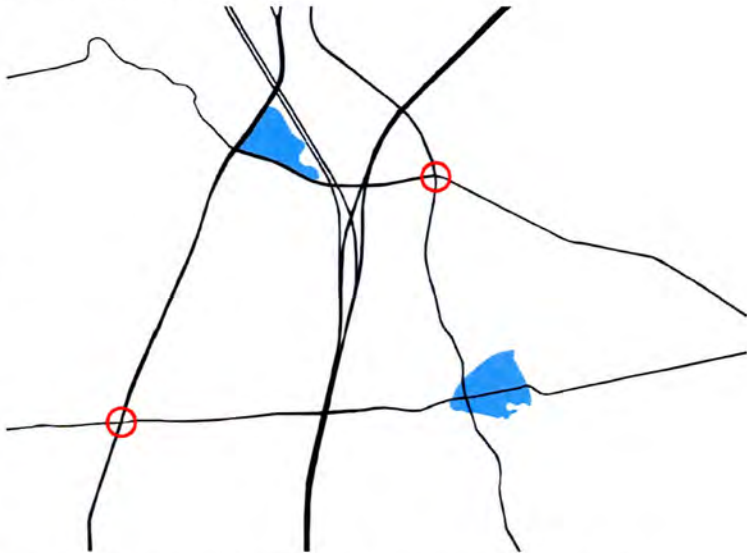
Baseball Fields

Walking Track

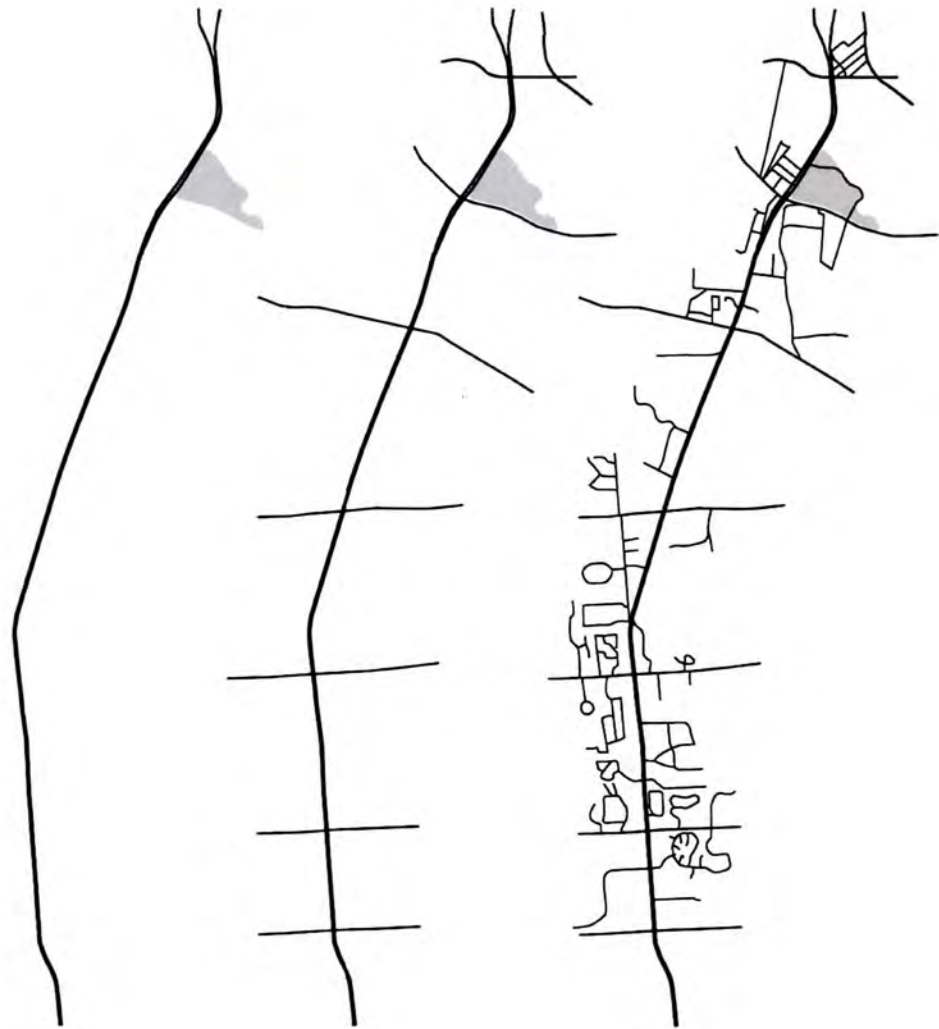
Proximity to area Bike Path(s)



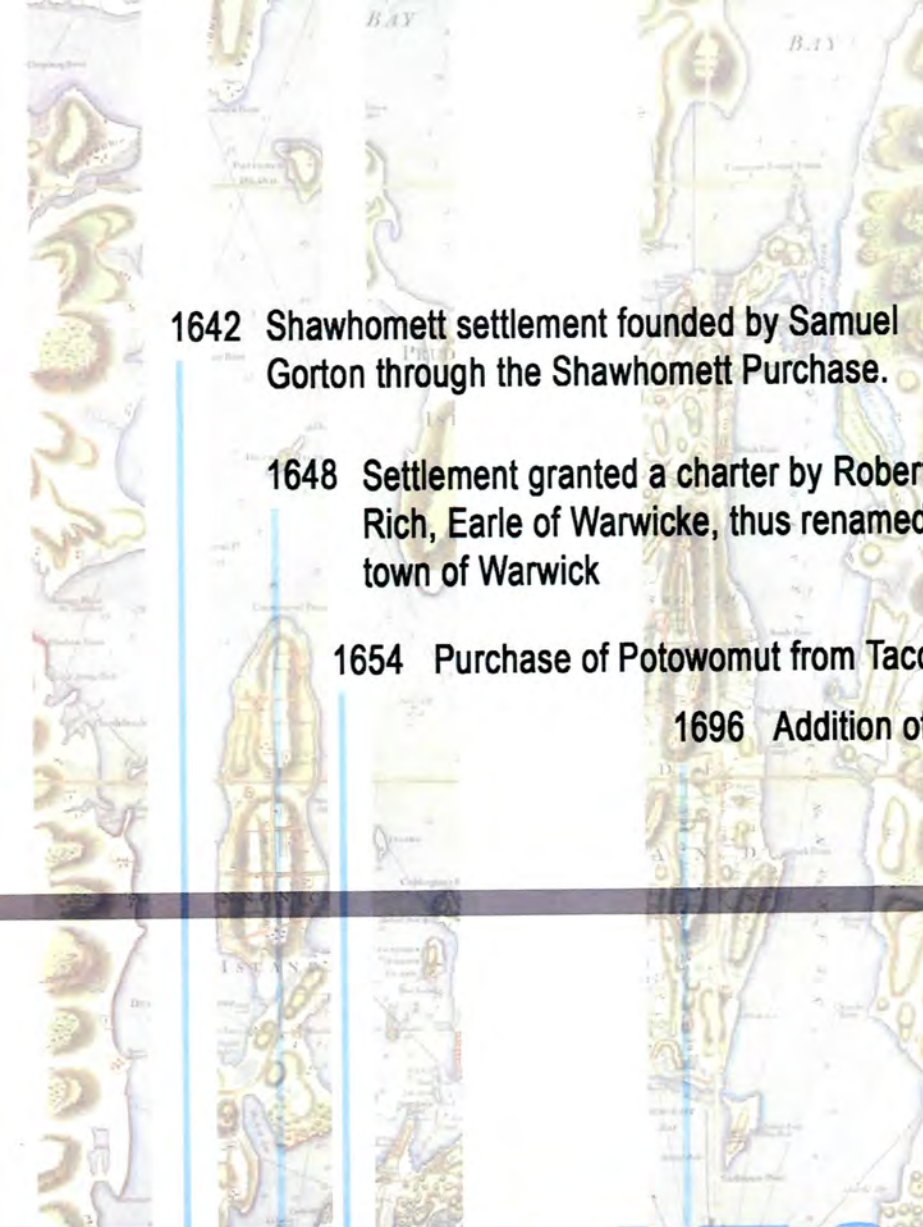
Planning zones in Warwick, RI - the city experiences a high amount of suburban development with commerce surrounding the major routes.



Rhode Island Mall's relation to the city center and the major roads that connect the two.



Heirarchy of roads along Route 2, the busiest vehicular network along the western edge of the city of Warwick.

A historical map of the Potomac River region, showing the river flowing between Maryland and Virginia. The map includes various geographical features like hills, water bodies, and settlements. Labels like 'BAY' and 'RIVER' are visible. The map is oriented vertically.

1642 Shawhomett settlement founded by Samuel Gorton through the Shawhomett Purchase.

1648 Settlement granted a charter by Robert Rich, Earle of Warwicke, thus renamed town of Warwick

1654 Purchase of Potowomut from Taccomann

1696 Addition of Pawtuxet lands

1750 Creation of Kent County - Towns of Warwick, Coventry, E. Greenwich, and W. Greenwich

1742 General Nathaniel Green is born in Warwick



1772 Rhode Island citizens trap and the british HMS Gaspee, a move towards the Revolutionary War



1776 America declares its Independence from Britian, Revolutionary War

1800 1820

1863 Warwick native Brig. Gen. George Sears Greene's
3rd Brigade holds Culp's Hill at the battle of Gettysburg



1893 Construction of Warwick Town Hall

1929 Construction of TF Green Airport

1996 TF Green Airport completes
\$210 million expansion

1951 Kent County Hospital opens

1969 Apponaug Mill fire devastates city's
historical mill quarter

1972 Knight campus, Community College of
Rhode Island is opened

1956 Warwick establishes its first
permanent fire department

1973 Quonset Point Naval Base closes

1931 Warwick is incorporated as a City

1921 Warwick establishes first permanent police force

1968 Midland shopping mall opens

1913 Creation of West Warwick

1972 Warwick Mall opens, opening
competition with the Midland mall

1861 America is engulfed in Civil War

1938 The Great New England Hurricane smashes into Warwick

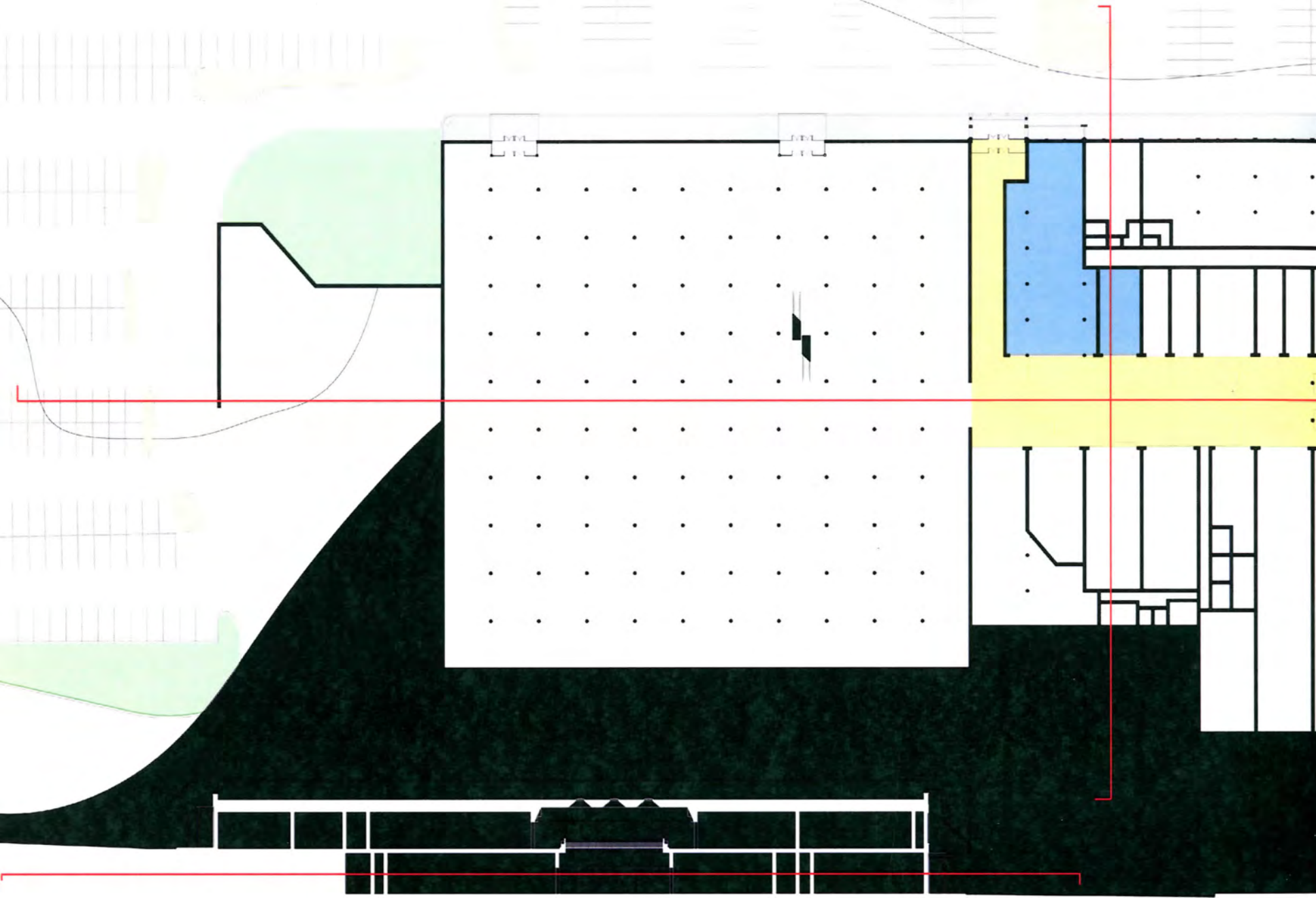
1954 Hurricanes Carol and Edna strike Warwick

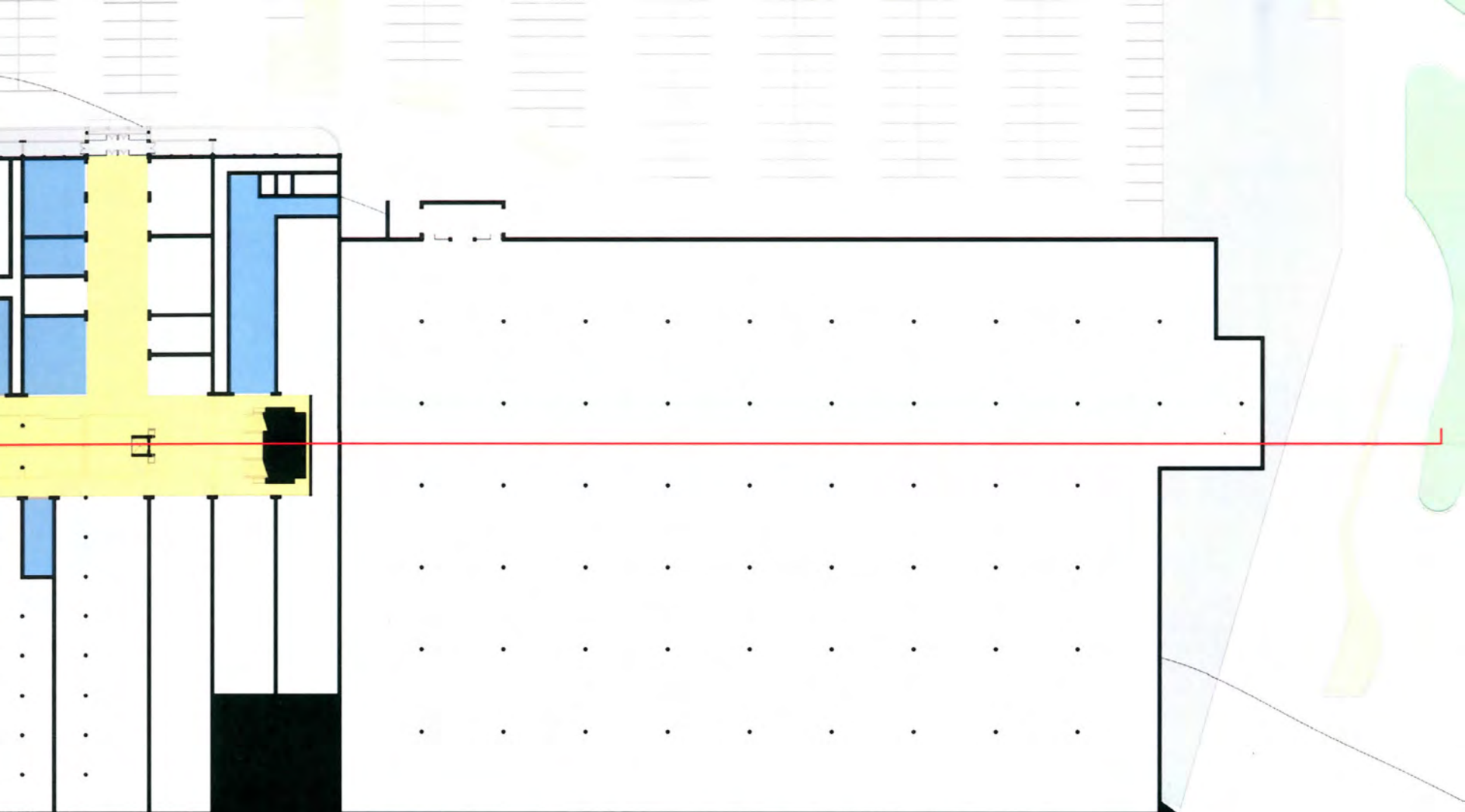


Painted murals along the upper entrance to the Rhode Island Mall.



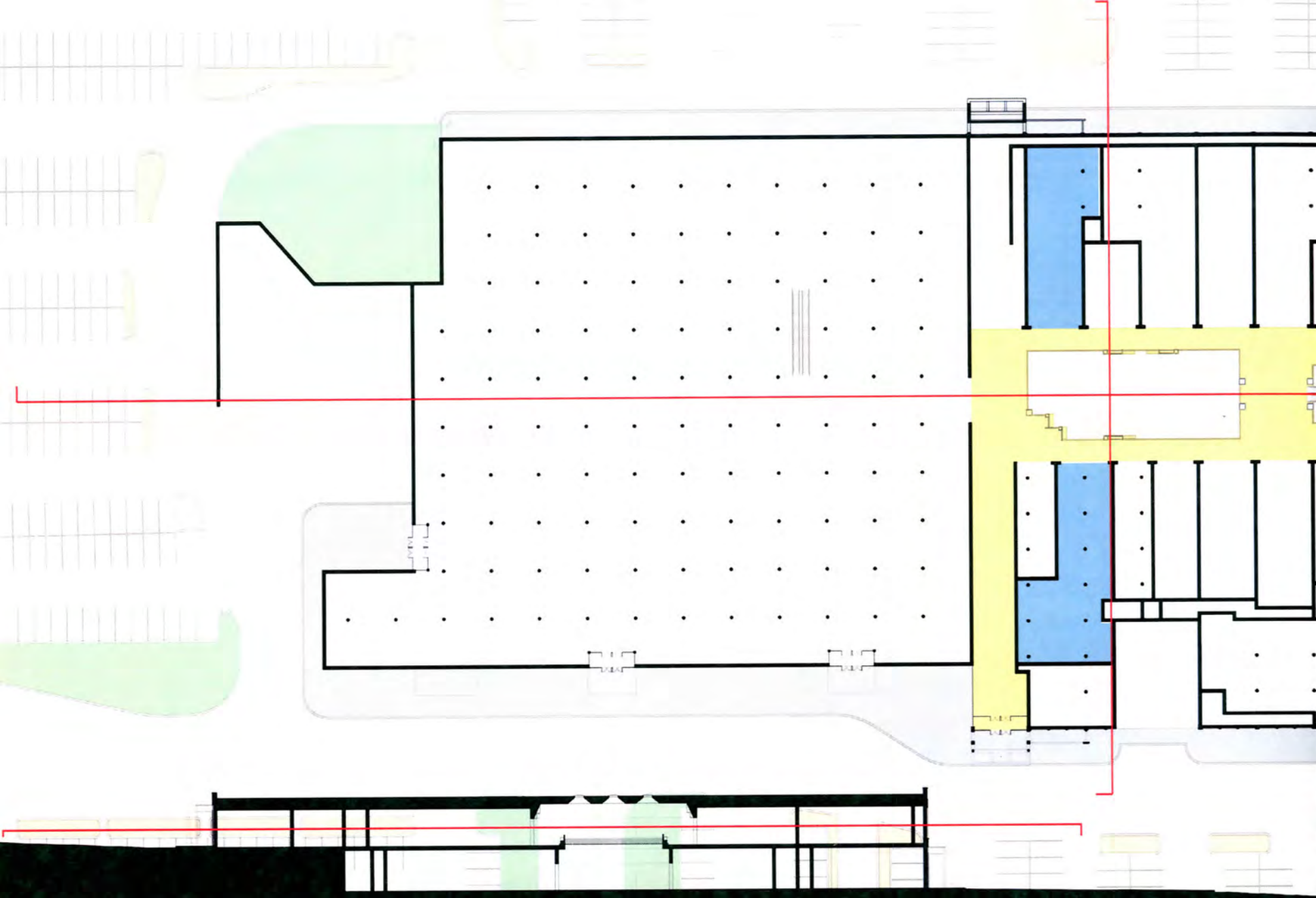
Painted murals along the lower entrance to the Rhode Island Mall.

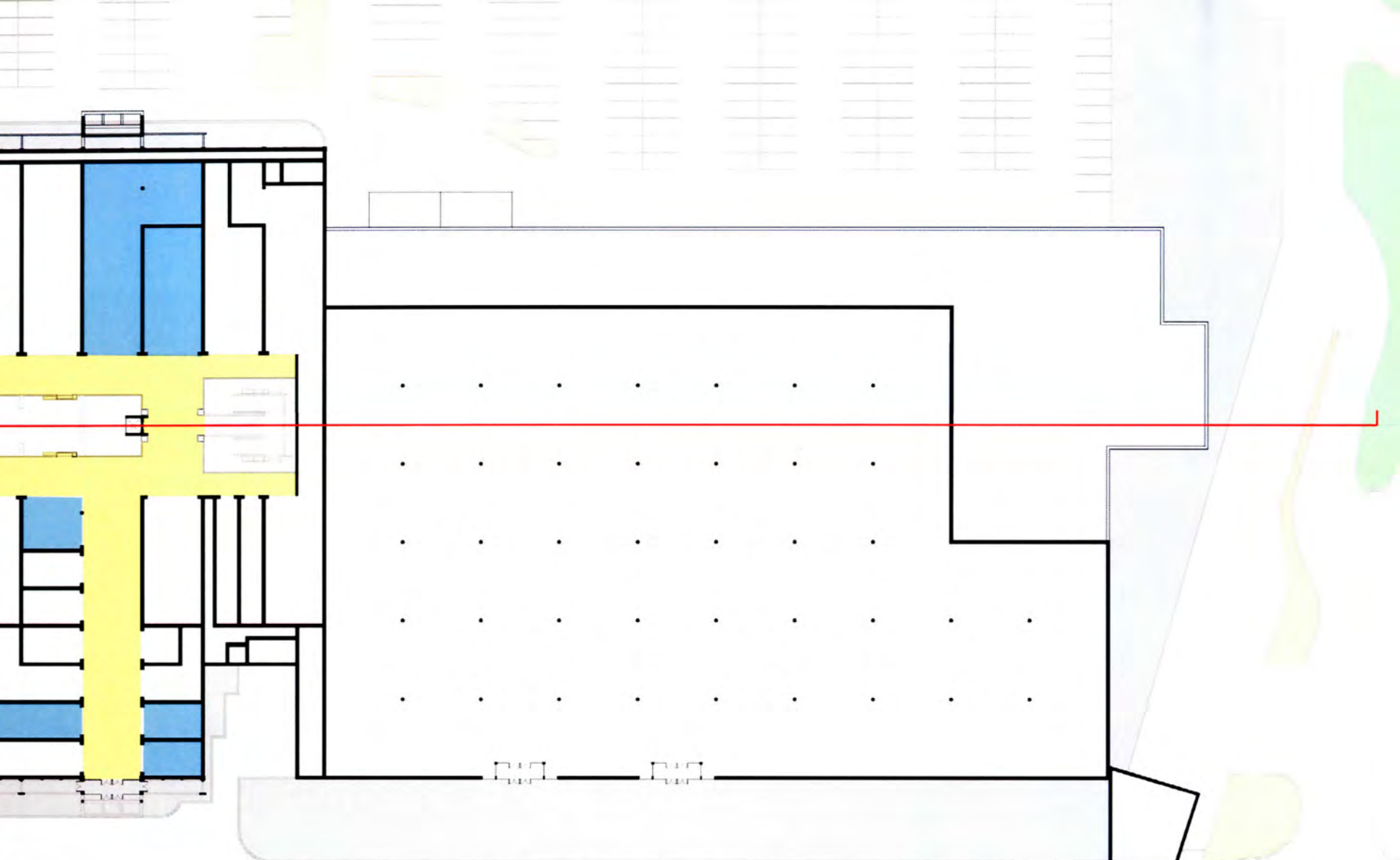




Rhode Island Mall | First Floor Plan

30 ft





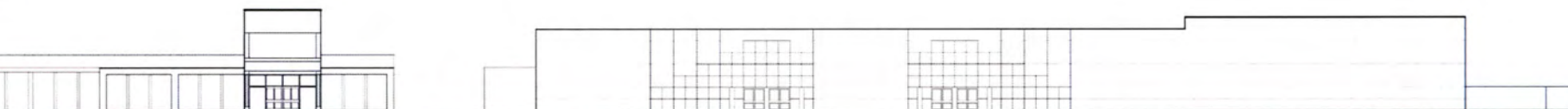
Rhode Island Mall | Second Floor Plan

30 ft

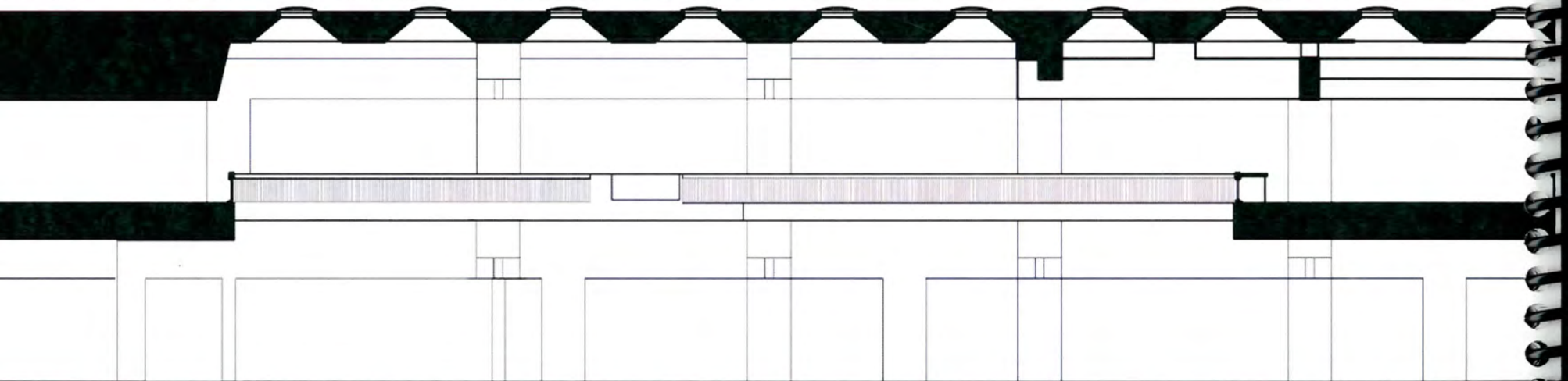


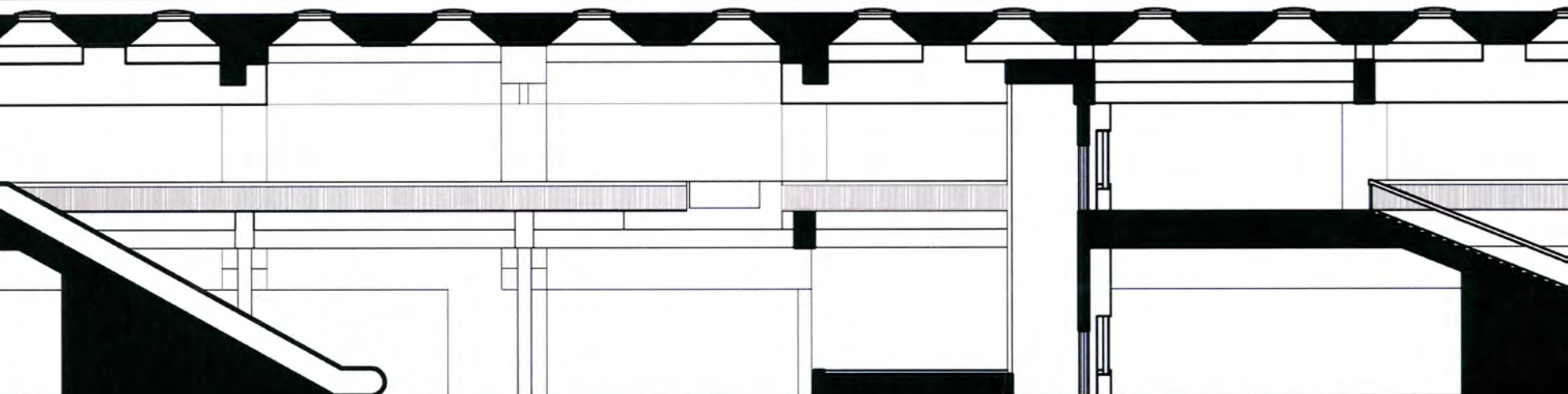


North Elevation

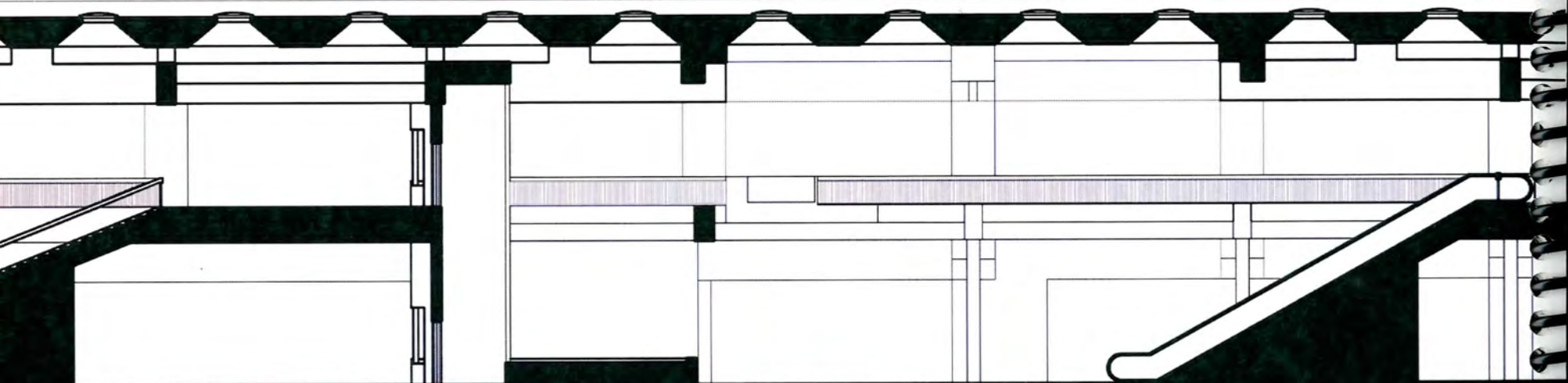


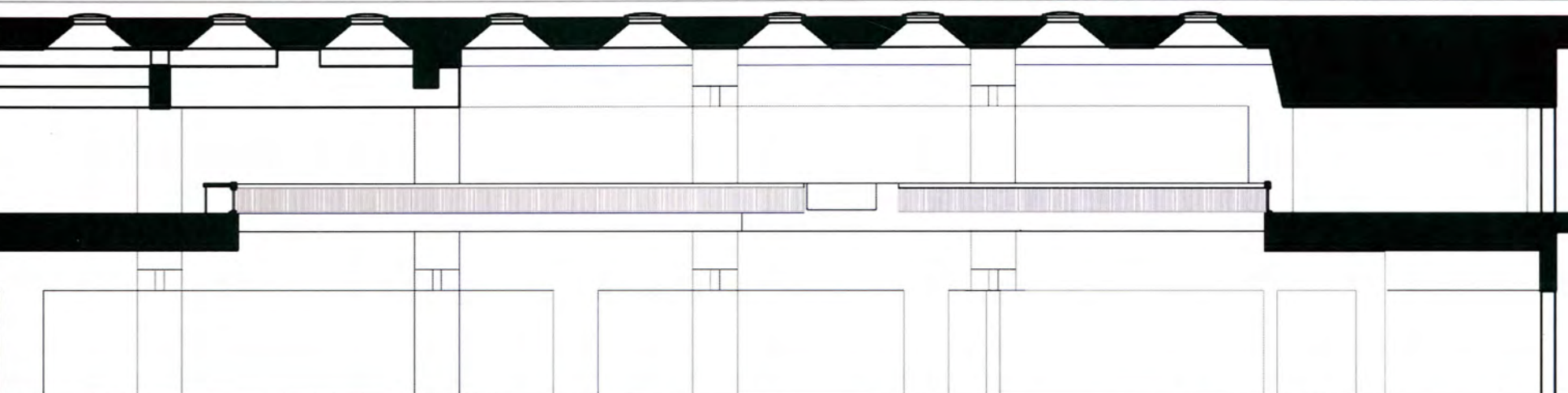
South Elevation





Interior South Elevation







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